

# HP StorageWorks D2D Replication Manager version 1.1 User Guide



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# 1 Introduction

HP StorageWorks D2D Replication Manager (Replication Manager) is a standalone software application that provides basic management capabilities in a replication environment, and provides an easy way for customers to manage up to 300 D2D devices that are being replicated across multiple sites. Using Replication Manager, administrators create, manage, and remove groups of devices; and establish and control user and administrator access to the groups and devices. Replication Manager allows administrators and users to review the status of the groups and devices to which they have access, either to ensure that replication is happening successfully and on schedule, or to respond when there are replication operation errors. Replication Manager also provides the ability to monitor disk usage and deduplication ratios for the devices. This allows administrators the ability to identify devices that may need additional capacity. Trend analysis is also available to look at disk capacity changes that occur on devices over a pre-determined period.

## Replication Manager Environment

Install Replication Manager software on a computer having a Microsoft Windows operating system that has network connectivity through which it can communicate with all the D2D Devices to be managed. All the required components are installed as a part of D2D Replication Management software installation.

## Minimum Requirements

System requirements for installing Replication Manager are as follows:

Server-side requirements:

- Supported Windows platforms (See [“Compatibility” \(page 7\)](#) for acceptable operating systems.)
- Standard LAN connectivity (for web-browser based GUI access)
- Initial 200 MB disk space for installation. (More space will be required as the system expands.)
- Internet Explorer v 6.0 or higher OR Mozilla FireFox v3.5 or higher

Client-side requirements:

- Internet Explorer v6.0 or higher, or Mozilla FireFox v3.5 or higher
- Adobe Flash plug-in v10.0 or higher
- Screen resolution 1024 x 768 or higher

D2D firmware requirements

- On a D2D4004i/D2D4009i, firmware v101.751 or higher
- On a D2D4004fc/D2D4009fc, firmware v101.747 or higher
- On a D2D4112, firmware v101.750 or higher

## Compatibility

Replication Manager is compatible with the following hardware and software:

### Hardware Devices

- D2D devices 250x, 400x, 41xx, and 43xx

### Operating Systems

- Windows 2000
- Windows 2003 x32
- Windows XP x32
- Windows Vista x32
- Windows 2008 x32
- Windows 7 x32

### Browsers

- Internet Explorer v6.0 or higher
- Firefox v3.5 or higher
- Adobe Flash plug-in v10.0 or higher

### Backup Applications

- Replication Manager software is transparent to backup applications.

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## 2 Getting Started

### Installing Replication Manager

Install Replication Manager on a system that does not have PostgreSQL database installed on the system. Replication Manager uses PostgreSQL database internally, and it requires exclusive access to the database.

To install Replication Manager:

1. Obtain the Replication Manager code by following the process found on the customer letter (Read Me First) in the replication License To Use.
2. Navigate to and click on the EH984-10502.exe file.  
The Install Shield starts and displays a welcome message.

3. Click **Next**.

The **End User License Agreement** dialog box appears.

4. Select the box to accept the terms of the license, then click **Next**.
5. Enter the location to install the software.
6. Choose the installation type:
  - a. If you choose Complete, click **Next** and then click **Install**.
  - b. If you choose Custom, click **Next** and then select the components to install: Replication Manager Server, Command Line Client, or both. Click **Next** and then click **Install**.

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**NOTE:** HP recommends that you install both features immediately. These features can be installed or uninstalled at a later date using the installer **MODIFY** option.

---

7. When installation is complete, a check box appears.
8. Select the box and click **OK** to launch the Replication Manager interface.

The interface can also be launched from the Start button by selecting **Start → Program Files → Hewlett Packard → HP D2D Replication Manager**.

---

**NOTE:**

If the Command Line Interface was installed as part of the above steps, you can access this feature by one of these methods:

- Select **Start+All Programs → Hewlett Packard → HP D2D Replication Manager → Command Line Client**.
  - Access a command prompt window and run the `rmscli` command.
- 
9. Log in to the system as `hprmsadmin`, then click on **Administration** in the Navigation tree.
  10. Establish the correct port number settings. Replication Manager uses port 3095 to receive client requests. If another application is already using port 3095, change one of the application configurations to use another port number. To do so:
    - a. Access the `server.xml` file in the `\tomcat\conf` folder.
    - b. Find `Connector port="3095" protocol="HTTP/1.1" connectionTimeout="20000"/` and change the port number 3095 to some other free port number value.
    - c. Restart the Replication Manager from the windows services list.



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**NOTE:**

Replication Manager installation includes the following related items, also accessible from the Start button (**Start** → **Program Files** → **Hewlett Packard** → **HP D2D Replication Manager**):

- Backup D2D Replication Manager Database—this utility helps in taking the backup of the configurations made in the software.
- Restore D2D Replication Manager Database—this utility helps in restoring the backed up configuration to the software. The user can choose any one of the previous backups he had taken for this restore.
- Readme.html
- Un-Install HP StorageWorks D2D Replication Manager—this utility un-installs the entire application.
- HP StorageWorks D2D Replication Manager User Guide

**NOTE:** D2D systems that are monitored by Replication Manager are referred to as devices. Before adding a device to Replication Manager, update the device firmware to the most recent version.

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## Upgrading Replication Manager

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**NOTE:** Before you upgrade, HP recommends that you close all browser sessions that access the Replication Manager.

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To upgrade the existing Replication Manager software:

1. Follow the procedure [“Installing Replication Manager” \(page 8\)](#).  
The installer automatically upgrades the software, creates a database backup of the previous software version, and saves the backup to  
[INSTALLDIR]\config\dbDump\D2DRMSdb\_V1\_0.dump.
2. Copy the backup file to a safe location.

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**NOTE:** The default user id admin will be changed to hprmsadmin, with the password hprmsadmin. All other user passwords will be reset to password.

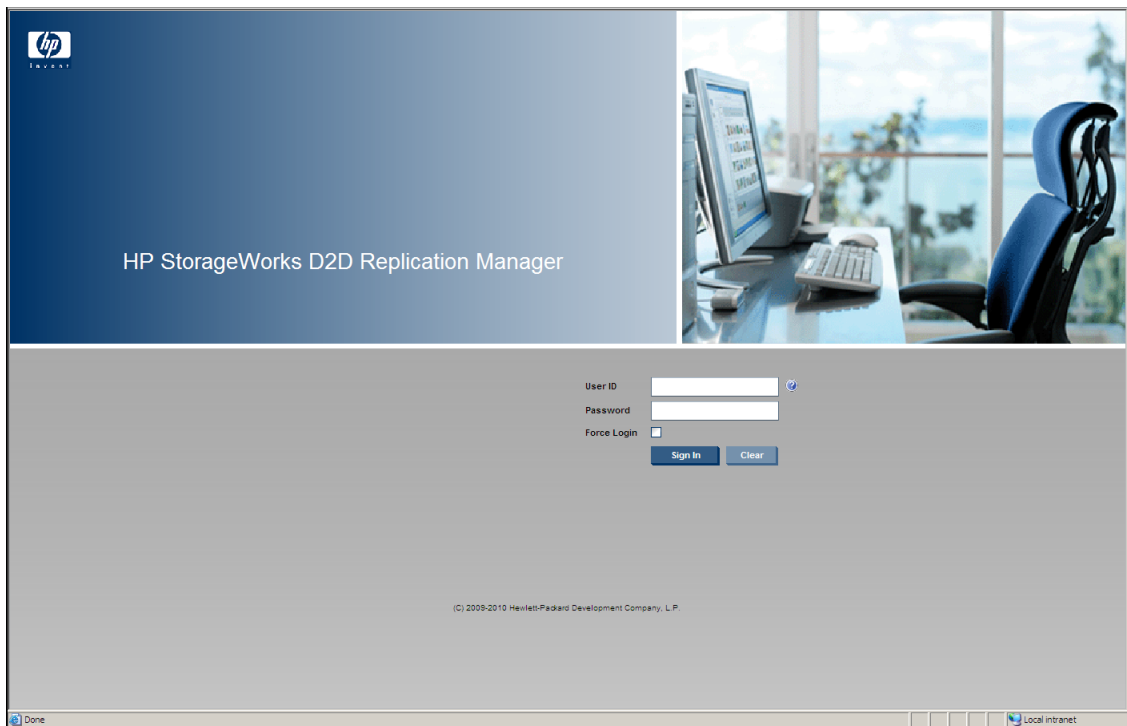
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- ❗ **IMPORTANT:** After you upgrade, it is mandatory that you delete your browser cache to ensure the proper functioning of the application on the upgraded version.
- 

## Launching and logging in to Replication Manager

1. Launch Replication Manager from the Start button by selecting **Start** → **All Programs** → **Hewlett Packard** → **HP D2D Replication Manager**, or by opening a browser and typing the url `http://<server>:3095/d2drms` into that window, where <server> is the ip address or the host name of the system on which the software is installed.

The Replication Manager login screen appears.



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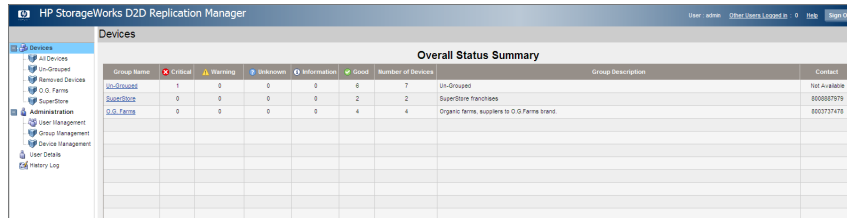
**NOTE:** The operating system allows only one browser window at a time to run the application from the Start button. Attempting to launch a second instance of the application from the Start button will fail. Instead, for each additional instance needed, open a new browser window, then type the url `http://<server>:3095/d2drms` into that window, where <server> is the IP address or the host name of the system on which the software is installed.

---

2. Choose one of the following options:
  - If the current authentication mechanism is local, enter the User Id and Password.
  - If the current authentication mechanism is LDAP, enter the User Id and Password. Then choose the Domain from the dropdown menu.

**NOTE:** The default user `hprmsadmin` continues to log in using local credentials, even when the authentication mechanism currently used is LDAP.

3. Click **Sign In**. The Overall Status Summary page appears.



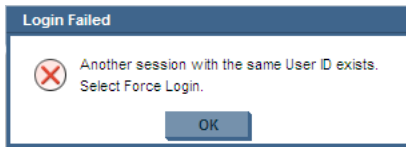
The screenshot shows the HP StorageWorks D2D Replication Manager interface. The title bar reads "HP StorageWorks D2D Replication Manager". The left sidebar contains a "Devices" menu with options: All Devices, Un-Grouped, Removed Devices, O.O. Farms, SuperStore, Administration, User Management, Group Management, Device Management, User Details, and History Log. The main content area is titled "Overall Status Summary" and contains a table with columns: Group Name, Critical, Warning, Unknown, Information, Good, Number of Devices, Group Description, and Contact. The table lists two groups: "Un-Grouped" with 7 devices and "O.O. Farms" with 4 devices.

Group Name	Critical	Warning	Unknown	Information	Good	Number of Devices	Group Description	Contact
Un-Grouped	0	0	0	0	0	7	Un-Grouped	Not Available
SuperStore	0	0	0	0	2	2	SuperStore franchises	8008807979
O.O. Farms	0	0	0	0	4	4	Organic farms, suppliers to O.O. Farms brand.	8007377478

At the first login for the administrator, only Un-Grouped appears in the Replication Manager Overall Status Summary page. No other devices or groups exist to appear. Perform the tasks in [“Configuring the Replication Manager” \(page 14\)](#) to populate this window.

At the first login for a user, the Overall Status Summary page contains groups to which the user has access. If the user has not been assigned to any groups by the administrator, no groups will appear in the Overall Status Summary page. Contact the administrator to be assigned to the appropriate group or groups.

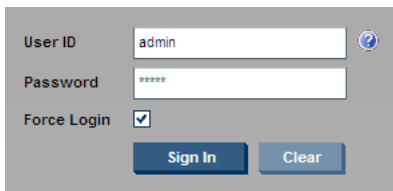
**NOTE:** If the Replication Manager detects that the user is already logged in, an error message appears.



This can happen for two reasons.

- When the Replication Manager browser is refreshed, the system may disconnect the user and require the user to log in again.
  - If the user closes the browser using the top-right-hand [x], the application signal is disconnected.
- In either of these cases, if the user tries to log in before the previous session times out, the user must force the login.

Click **OK** to return to the login screen, enter the information again, select the **Force Login** box, then click **Sign In**.

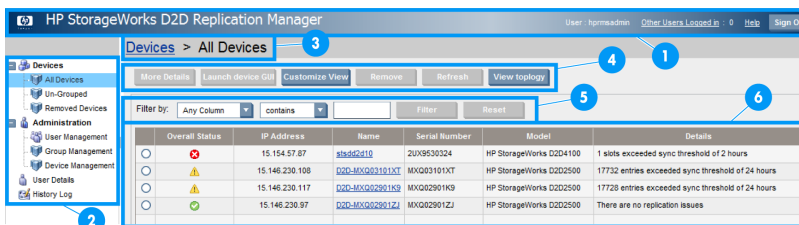
A login form with fields for "User ID" (containing "admin"), "Password" (masked with "\*\*\*\*\*"), and a "Force Login" checkbox (checked). There are "Sign In" and "Clear" buttons at the bottom.

- ❗ **IMPORTANT:** After the first login as user name `hprmsadmin` and password `hprmsadmin`, change the `hprmsadmin` password. If the new password must be recorded, save it to a safe location. This will avoid unauthorized person accessing the system using the default login user name and password.

## Identifying regions of the interface

Throughout this guide, procedures contain reference to regions of the Replication Manager interface. See [Figure 1 \(page 12\)](#) to become familiar with these regions. A populated system is shown.

**Figure 1 Regions of the interface, administrator view**



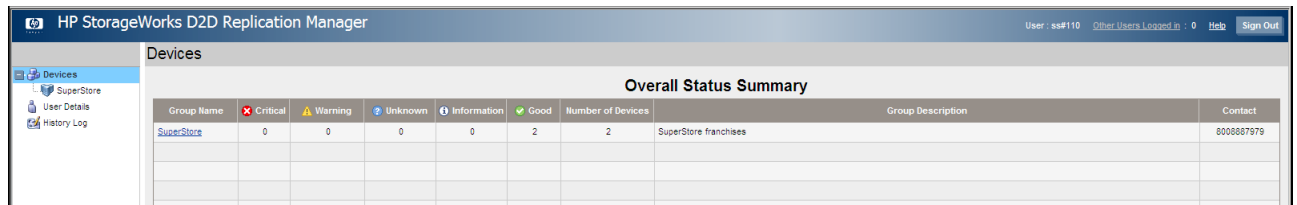
1. Masthead with login information
2. Navigation tree
3. Bread crumbs
4. Context-sensitive action buttons
5. List item filter
6. Content pane

## Understanding administrator- and user-level permissions

Those with administrator-level permissions (administrators) can view all items in the Replication Manager. Those with user-level permissions (users) can only view those items for which the user has permissions. For this reason, more information and options are available to an administrator.

For example, compare the information available in the administrator view (shown in [Figure 1 \(page 12\)](#)) to the information available in the user view (shown in [Figure 2 \(page 13\)](#)).

**Figure 2 Regions of the interface, user view**



The screenshot displays the HP StorageWorks D2D Replication Manager interface in user view. The top navigation bar includes the application name, user information (User: ss#110), and a 'Sign Out' button. A left-hand menu lists 'Devices', 'SuperStore', 'User Details', and 'History Log'. The main content area is titled 'Devices' and features an 'Overall Status Summary' table. The table has columns for Group Name, Critical, Warning, Unknown, Information, Good, Number of Devices, Group Description, and Contact. The data row shows 'SuperStore' with 0 critical, 0 warning, 0 unknown, 0 information, and 2 good devices, totaling 2 devices. The group description is 'SuperStore franchisees' and the contact is '8000887979'.

Group Name	Critical	Warning	Unknown	Information	Good	Number of Devices	Group Description	Contact
<a href="#">SuperStore</a>	0	0	0	0	2	2	SuperStore franchisees	8000887979

This User Guide includes all procedures that can be performed by the Replication Manager, and specifies those that only the administrator can perform, or that are different for users and administrators.

## 3 Configuring the Replication Manager

To start using Replication Manager the administrator must configure it by performing the following procedures in order:

1. “Adding a device” (page 14)
2. “Adding new users or administrators” (page 15)
3. “Creating a new group” (page 16)

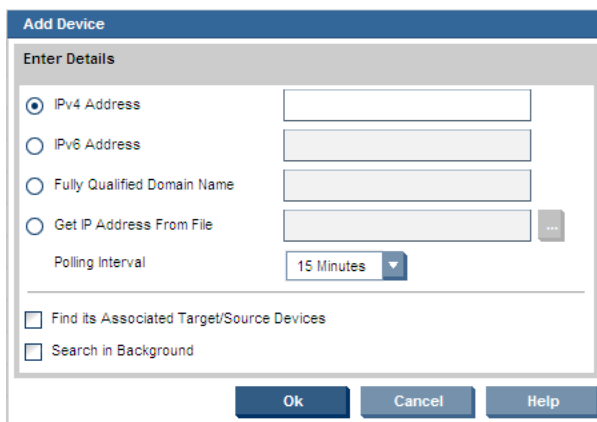
**NOTE:** Only an administrator can perform these procedures. Those with user-level permissions cannot add a device, add new users, or create groups.

### Adding a device

**NOTE:** D2D systems that are monitored by Replication Manager are referred to as devices. Before adding a device to Replication Manager, update the device firmware to the most recent version.

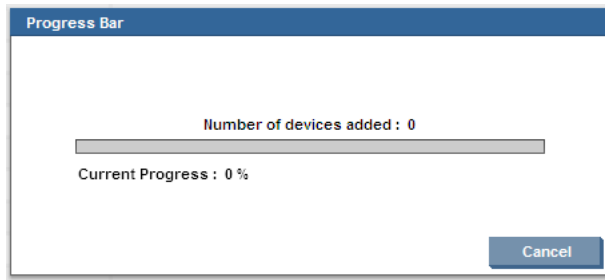
To add devices:

1. From the Navigation tree under Administration, select **Device Management**.
2. In the Action buttons, click the **Add** button.  
The Add Device dialog box appears.
3. Select the appropriate radio button to determine how Replication Manager will locate the device, then type the correct information into the corresponding field.



4. Select the appropriate polling interval from the Polling Interval field.  
The polling interval indicates how often the device is surveyed by Replication Manager to determine and record or report its status.
5. Select or clear the box to indicate whether to find the associated target and source devices.  
If this box is selected, Replication Manager will search for any target and source devices connected to the device being added, and will also add them to the system.
6. Select or clear the box to indicate whether to search in the background.
7. Click **OK** to continue.

If Search in Background is selected, other operations can be performed while the devices are being added. If Search in Background is not selected, the Add Devices progress bar appears until the devices are added successfully (or if the operation fails). Other operations cannot be performed while the devices are being added.



If the operation fails, an error dialog box appears. Click **OK** to close the dialog box, then repeat this procedure.

8. If the operation succeeds, a success dialog box appears. Click **OK** to close the dialog box. The newly-added devices are included in the list of devices.

## Adding new users or administrators

Administrators can add new users or administrators to the system. The following procedures explain how to add new users or administrators, depending on your current authentication mechanism.

Initially, the Replication Manager uses local authentication. You can change the authentication mechanism to use LDAP authentication. To do so, see [“Managing the Authentication Mechanism”](#) (page 41).

### Local authentication mechanism: adding new users or administrators

To add new users or administrators when using the local authentication mechanism:

1. From the Navigation tree under Administration, select **User Management**.
2. On the Active Users tab, click the **Add** button.  
The Add New User dialog box appears.
3. In the **General** section, type the appropriate information into each field of the Add New User dialog box, using the information presented to the right of the fields to ensure the values are acceptable.  
For example, do not include dashes, spaces, or periods in the User Contact Number field.
4. In the **Role Selection** section, select the appropriate radio button to designate whether the person being added is an Administrator or a User.
5. When all information is complete, click the **Submit** button.

---

**NOTE:** If any of the information does not meet the format requirements, the screen refreshes and displays an error message in red text above the User ID field specifying which field to correct. Enter the correct information and click the **Submit** button again.

---

6. The **Success** dialog box appears.
7. Click the **OK** button to exit the dialog box and return to the User Management screen. The newly-added user or administrator is included in the list of users.

### LDAP authentication mechanism: adding new users or administrators

To add new users or administrators when using the LDAP authentication mechanism:

1. From the Navigation tree under Administration, select **User Management**.
2. On the **Active Users** tab, click **Add**.
3. If you know the LDAP User Id of the new user:
  - a. In the **Add New User** window, select the **LDAP User id:** radio button, and type the Id.
  - b. In the **Role Selection** window, select the appropriate radio button.

- c. If you are logged in as the `hprmsadmin` administrator, you must provide the login credentials of the LDAP from which you are adding the user. Otherwise, the system automatically displays the credentials that were provided upon login.
  - d. Click **Submit**.
4. If you only know the E-mail address of the new user:
  - a. Select the **User Email id:** radio button, and enter the user email address.
  - b. If you are logged in as the `hprmsadmin` administrator, you must provide the login credentials of the LDAP from which you are adding the user. Otherwise, the system automatically displays the credentials that were provided upon login.
  - c. Click **Validate**.

If the user details are found in the LDAP server, the user email ID will be populated. Otherwise, an error message appears.
  - d. In the **Role Selection** window, select the appropriate radio button.
  - e. Click **Submit**.
5. If the information is correct, a success message appears. Click **OK** to close the dialog box.

---

**NOTE:** The Administrator can only add users from his own LDAP domain.

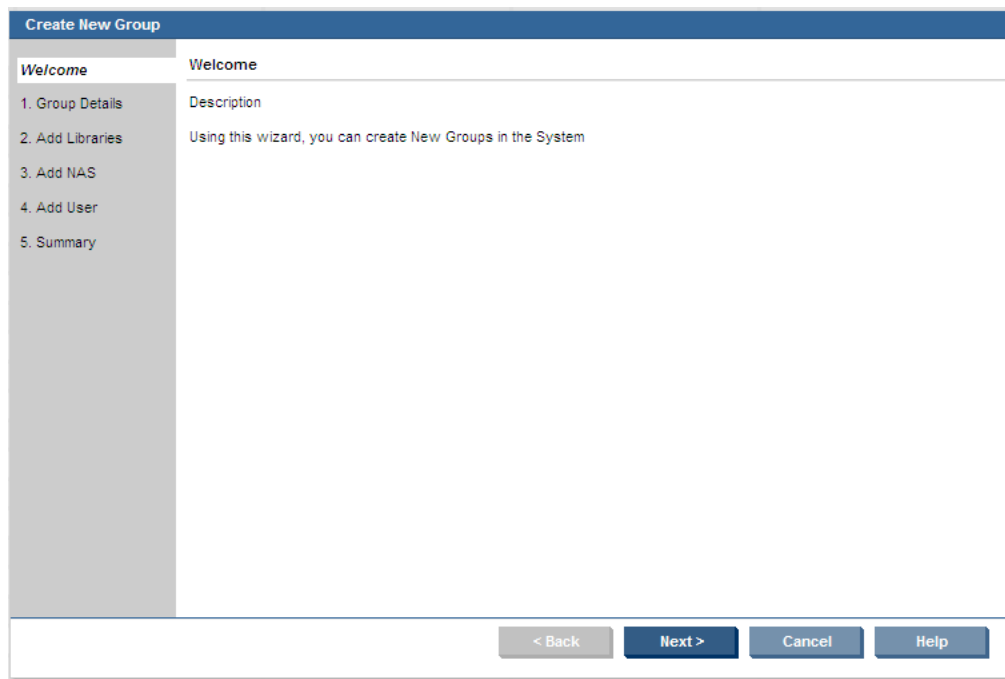
---

## Creating a new group

The administrator can create a new group using the following procedure:

1. From the Navigation tree under Administrator, select Group Management.
2. Click the **Create** Action button.

The Welcome screen of the Create New Group wizard appears.



3. In the wizard, click the **Next** button to begin.
4. On the **1. Group Details** screen in the wizard, type the appropriate information into each field.



**Create New Group**

Welcome

**1. Group Details**

Enter Group Details :

\* Group Name  (Max 30 characters)

\* Group Description  (Max 50 characters)

Contact Number  (Numbers Only)

\* Mandatory fields

< Back   Next >   Cancel   Help

5. Click the **Next** button.
6. On the **2. Add Libraries** screen in the wizard, if you wish to add libraries to the group:

**Create New Group**

Welcome

1. Group Details

**2. Add Libraries**

Select Libraries for this Group

**Ungrouped Libraries :**

Device Name	Library Name
stdd2d03	qaLibrary 2
stdd2d03	qaLibrary 3
stdd2d03	qa_4
stdd2d03	qa_8
stdd2d03	QA_prbu_1
stdd2d	stdd2d01_lib04
stdd2d	stdd2d01_lib01
stdd2d	stdd2d01_lib02
stdd2d03	qaLibrary 1
stdd2d	stdd2d01_lib03
stdd2d03	basanna

**Selected Libraries :**

Device Name	Library Name

Add All >   Add >   < Remove   < Remove All

< Back   Next >   Cancel   Help

- a. Click on the names of libraries in the Ungrouped Libraries table to be added to the new group. To select several at a time, hold down the CTRL key on the keyboard and click each library to be added. The libraries will be highlighted in the table.
- b. Click the **Add** button between the two tables in the wizard. This moves the highlighted libraries from the Ungrouped Libraries table to the Selected Libraries table.

---

**NOTE:** To add all ungrouped libraries to the group, click the **Add All** button.

---

- c. To remove libraries added to the group, click the names of the libraries in the Selected Libraries table to be removed. To select several at a time, hold down the CTRL key on the keyboard and click each library to be added.
  - d. Click the Remove button between the two tables in the wizard. This moves the highlighted libraries from the Selected Libraries table to the Ungrouped Libraries table.
- 

**NOTE:** To remove all libraries from the group, click the **Remove All** button.

---

7. Click the **Next** button.
8. On the **3. Add NAS** screen in the wizard, if you wish to add NAS Shares to the group:

The screenshot shows the 'Create New Group' wizard at step 3, 'Add NAS'. The left sidebar lists the steps: Welcome, 1. Group Details, 2. Add Libraries, 3. Add NAS (selected), 4. Add User, and 5. Summary. The main area is titled '3. Add NAS' and 'Select NAS for this Group'. It contains two tables: 'Ungrouped NAS' and 'Selected NAS'. The 'Ungrouped NAS' table has columns 'Device Name' and 'NAS Share Name', with one row containing 'std2d03' and 'Share3'. The 'Selected NAS' table is empty. Between the tables are four buttons: 'Add All >', 'Add >', '< Remove', and '< Remove All'. At the bottom of the wizard are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

- a. Click on the name of the NAS share in the Ungrouped NAS table to be added to the new group. To select several at a time, hold down the CTRL key on the keyboard and click each NAS share to be added. The NAS Shares will be highlighted in the table.
  - b. Click the **Add** button between the two tables in the wizard. This moves the highlighted shares from the Ungrouped NAS table to the Selected NAS table.
- 

**NOTE:** To add all ungrouped NAS Shares to the group, click the **Add All** button.

---

- c. To remove a NAS share added to the group, click the name of the share in the Selected NAS table to be removed. To select several at a time, hold down the CTRL key on the keyboard and click each NAS share to be added.
  - d. Click the **Remove** button between the two tables in the wizard. This moves the highlighted shares from the Selected NAS table to the Ungrouped NAS table.
- 

**NOTE:** To remove all NAS shares from the group, click the **Remove All** button.

---

9. Click the **Next** button.
10. On the **4. Add User** screen of the wizard:

- a. Click on the name of the user in the Available Users table to be added to the new group. To select several at a time, hold down the CTRL key on the keyboard and click each name to be added. The users will be highlighted in the table.
- b. Click the **Add** button between the two tables in the wizard. This moves the highlighted users from the Available Users table to the Selected Users table.

---

**NOTE:** To add all users to the group, click the **Add All** button.

---

- c. To remove a user added to the group, click the name of the user in the Selected Users table to be removed. To select several at a time, hold down the CTRL key on the keyboard and click each name to be added.
- d. Click the **Remove** button between the two tables in the wizard. This moves the highlighted users from the Selected Users table to the Available Users table.

---

**NOTE:** To remove all users from the group, click the **Remove All** button.

---

11. Click the **Next** button.
12. On the **5. Summary** screen of the wizard, review the information for correctness.

**Create New Group**

Welcome

1. Group Details

2. Add Libraries

3. Add NAS

4. Add User

**5. Summary**

Summary

Group Name: SuperStore

Group Description: Franchises for the SuperStore chain

Contact Number:

Selected Libraries :

Device Name	Library Name
stdd2d03	basanna
stdd2d03	qa_8
stdd2d03	qaLibrary 2

Selected IAS :

Device Name	NAS Share Name
stdd2d03	Share3

Selected Users :

User
2nd Shift Admin

< Back Finish Cancel Help

Use the Back button to make any changes to the information for the new group.

13. Once the information is correct, click the **Finish** button.

The Success dialog box appears.

**Success**

✓ New Group Added successfully.

OK

14. Click the **OK** button to exit the dialog box and return to the Group Management screen.

The newly-created group is included in the list of groups.

---

**NOTE:** A group can be created without adding libraries, NAS Shares, or users. To add to (or modify) this group later, follow the procedure in [“Modifying a group” \(page 49\)](#).

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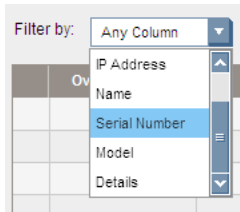
**NOTE:** This same list of groups can be viewed by selecting **Devices** from the Navigation tree.

---

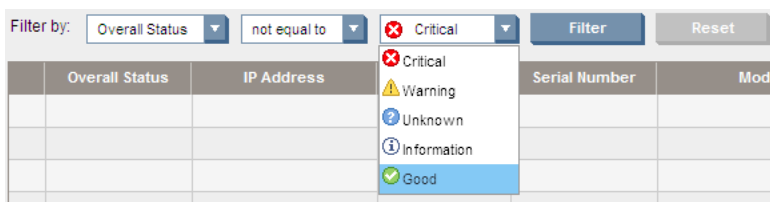


To filter the devices to appear:

1. In the Navigation tree, select a group of devices (for example, a named group, All Devices or Un-Grouped).  
All devices in that group are listed in the content pane. The list item filter fields appear.
2. In the left-most **Filter by** field, select the column by which to filter or select **Any Column**.  
The filter options in this field are **Any Column**, **Overall Status**, **IP Address**, **Name**, **Serial Number**, **Model**, and **Details**.



3. In the middle **Filter by** field, select or type in the appropriate value.  
These parameters will change depending on what is selected in the Filter by field. For example, if you select **Model** as your filter, the parameters to choose from are **contains**, **equal to**, or **not equal to**. If you select **Overall Status** as your filter, the parameters to choose from are **equal to** or **not equal to**.
4. In the right-most **Filter by** field, type in or select the appropriate value.  
These options will also change depending on what is selected in the first two filter fields. For example, if you select **Model** as your filter, the parameters to choose from are **contains**, **equal to**, or **not equal to** and you must type in the value of the model for which to filter. If you select **Overall Status** as your filter, the parameters to choose from are **equal to** or **not equal to**, and the options to choose from are **Critical**, **Warning**, **Unknown**, **information**, and **Good**.



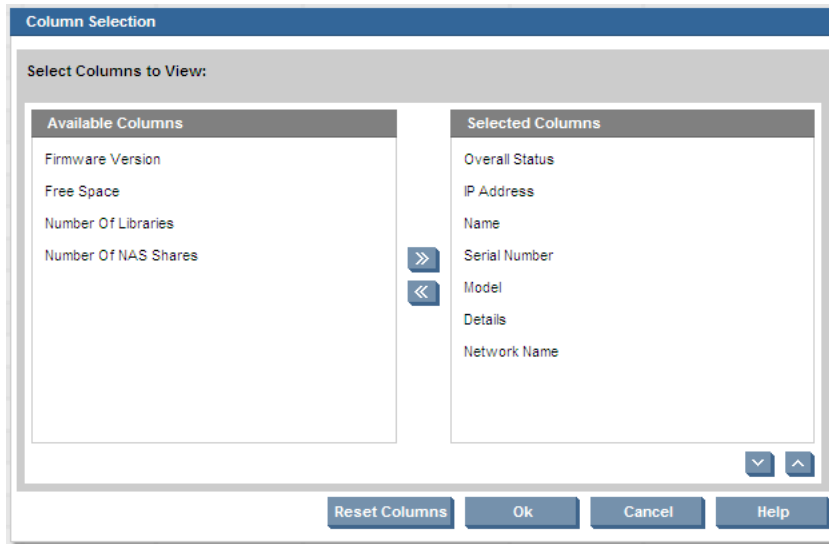
5. After all three fields are complete, click the **Filter** button.  
The content pane displays only those devices in the group that meet the filter criteria.
6. To view all devices in the group again, click the **Reset** button.

## Customizing columns to appear

Replication Manager allows the user or administrator to customize the columns displayed in many of the device group screens.

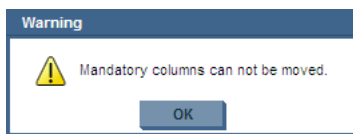
To select the columns to appear:

1. In the Navigation tree, select the group of devices.  
All devices in that group are listed in the content pane.
2. In the Context-Sensitive Action buttons, click the **Customize View** button.  
The Column Selection dialog box appears.



3. From the list of Available Columns on the left of the dialog box, click the column titles to select those you wish to appear, then click the >> button.  
These column titles are added to the Selected Columns list on the right of the dialog box.
4. To remove the properties from Selected Columns, click the column titles in that list to be removed, then click <<.  
These column titles are removed from the Selected Columns list and returned to the Available Columns list.

**NOTE:** The Overall Status, IP Address, Name, Serial Number, Model, and Details columns cannot be removed. When one of these columns is selected, clicking the << button will result in a Warning dialog box.



Click **OK** to close the dialog box and continue.

5. To change the order in which the column appears, highlight a selected column and use the up or down arrow buttons below the Selected Columns list.
6. Click the **OK** button to save these settings.

**NOTE:** Click the **Reset Columns** button to restore the original columns.

## Viewing topology

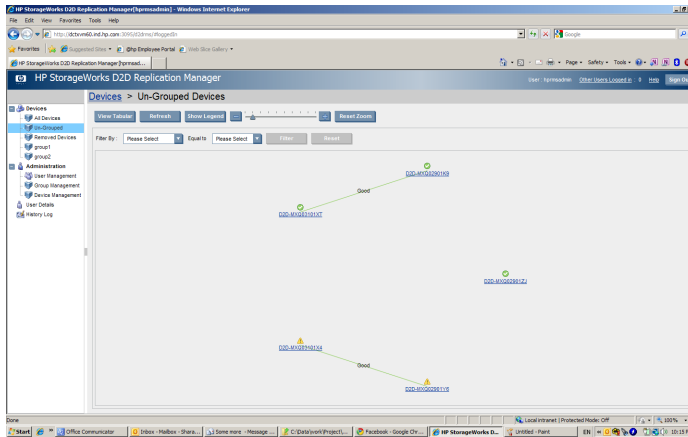
Replication manager allows the user to view the devices and the replication between them in a graphical format. In the topology view the user can see all the devices that are part of that group. He can also see the replication relation between the devices but this replication relation will be group specific (he will be able to see the replication only if either the source or target library/NAS Share is in the current group).

To view topology:

1. From the Navigation tree, select a group of devices to view (including All Devices or Un-Grouped).

All devices in the selected group appear in the main screen.

- Click **View Topology** to display the following topology information for the selected group:



- The status icon indicates device status.
  - Lines between devices indicate a replication relationship. The color of a line indicates the status of replication, based on the worst status. For example, if one replication between devices is Critical, but the rest are Good, the line color corresponds to the Critical status.
  - A tool tip on the replication line provides more information about replication status.
  - Click on the hyperlink to a device to view device details.  
If there is no hyperlink for a listed device, the device is not part of the selected group.
- If appropriate, filter what is included in the topology view:
    - From the topology view, in the **Filter by** field, select **Device Status** or **Replication Status**.
    - In the **Equal to** field, select the appropriate status (Critical, Warning, Unknown, Information, or Good).
    - Click **Filter** to display the data matching the filter criteria.
    - Click **Reset** to clear the filter and display all data for the device group.
  - If appropriate, use the zoom scale and **Reset Zoom** button, located on the right of the context-sensitive action buttons:
    - Click the – (minus) button to reduce the zoom level.
    - Click the + (plus) button to increase the zoom level.
    - Drag the slider between the plus and minus buttons to set the zoom to a value of your choice.
    - Reset the zoom to the original level by clicking **Reset Zoom**.
  - If appropriate, click **View Legend** for information to interpret the data shown in the topology view. Click **Close** to exit the **Topology Viewer Legend**.
  - To update the information in the topology viewer, click **Refresh**.  
The topology viewer is not updated automatically. Information that was current when you clicked **View Topology** is shown until you click **Refresh**.

## Viewing device details

To view details of a specific device, follow one of these procedures:



- From the Navigation tree under Devices, click the name of the group in which the device resides, then from the list of devices displayed in the table in the main screen, select the radio button next to the device name, then click **More Details**.
- From the Navigation tree, click Devices, then from the list of groups displayed in the Overall Status Summary table click the name of the group in which the device resides, select the radio button next to the name of the device itself, then click **More Details**.

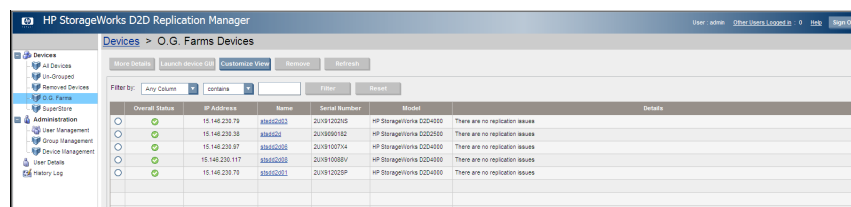
Details about the device appear in the main screen. From this screen, use the tabs at the top to select more options. The tasks you can perform using these options are as follows:

- “Viewing current issues” (page 25)
- “Viewing virtual libraries” (page 26)
- “Viewing NAS Shares” (page 28)
- “Viewing device statistics” (page 30)

## Viewing current issues

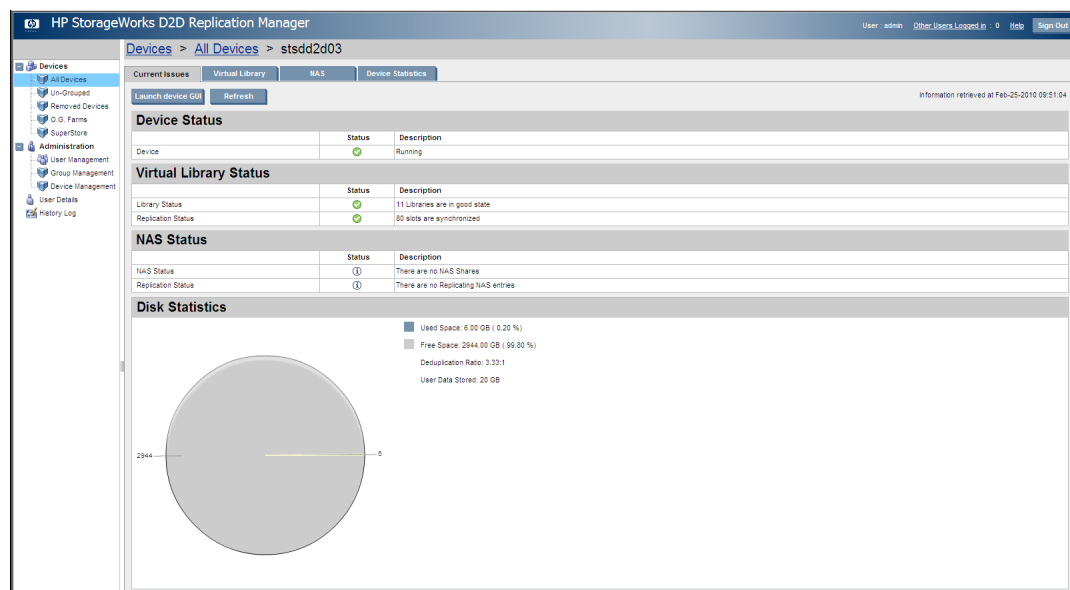
Users and administrators can view current issues for the devices to which they have access. To do so:

1. In the Navigation tree under Devices, select the group that contains the device to be viewed. The list of devices in the group appears in the main panel.



2. Select the radio button for the device to be viewed.
3. In the Action buttons, click **More Details**.

Device details are displayed, and the default view is the Current Issues tab.



The Current Issues view displays the current status of the device, the status of any virtual libraries on the device, the status of any NAS Shares on the device, the amount of used and free space on the disk, the deduplication ratio, and how much user data is stored.

4. To refresh the device information, click **Refresh** from the Action buttons.
5. To check more details, click **Launch Device GUI** from the Action buttons.

A new browser window opens displaying the device interface at the login screen. Refer to the user guide for that device or the device software for more information.

**NOTE:** If necessary, disable pop-up blockers on the web browser so that the new window can open.

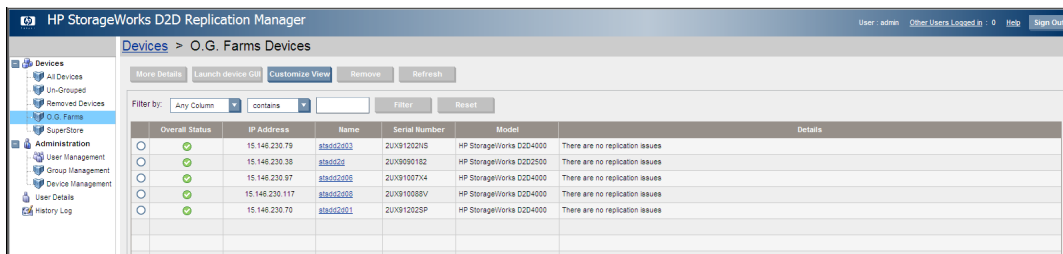
**NOTE:** To view details for a different device within that group, click on **[group name] Devices** in the bread crumbs, then select the radio button of the device to view.

## Viewing virtual libraries

Users and administrators can view details of the devices to which they have access. To do so:

1. In the Navigation tree under Devices, select the group that contains the device with the virtual library to be viewed.

The list of devices in the group appears in the main panel.



2. Select the radio button to select the appropriate device.
3. In the Action buttons, click **More Details**.

Device details are displayed, and the default view is the Current Issues tab.

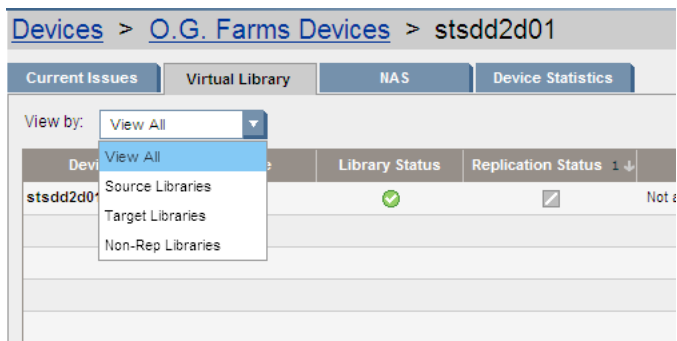
4. Click the **Virtual Library** tab.

The Virtual Library screen appears.



For each virtual library on the device, the device and library name, library status, replication status, and details are listed.

5. To sort the list by a specific column, click the column title once to view by ascending order and twice to view by descending order.
6. To filter libraries by type, select the type of libraries to view (all, source, target, or non-replicating) in the **View by** field.



The screen refreshes to display only libraries of that type.

**NOTE:** If there are no libraries of that type, the list appears but there are no entries.

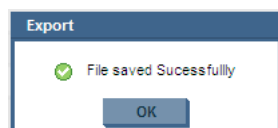
**NOTE:** When viewing only Source Libraries, click the + sign next to the library name to display the associated Target Library. Source Libraries have only one target library.

When viewing only Target Libraries, click the + sign next to the library name to display the associated Source Libraries. Target Libraries may have more than one Source Library.



7. To export the library information:
  - a. Click **Export** from the Action buttons.
  - b. In the **Select location for download [file name]** dialog box, navigate to the appropriate folder in which to save the file.
  - c. Ensure the file name is appropriate.
  - d. Click the **Save** button.

A success dialog box appears.



- e. Click **OK** to close the dialog box.

8. To launch the library interface, click **Launch Device GUI** from the Action buttons.

A new browser window opens displaying the device interface at the login screen. Refer to the user guide for that device or the device software for more information.

**NOTE:** If necessary, disable pop-up blockers on the web browser so that the new window can open.

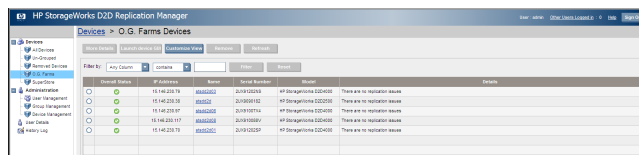
**NOTE:** To view details for a different device within that group, click on **[group name] Devices** in the bread crumbs, then select the radio button of the device to view.

## Viewing NAS Shares

Users and administrators can view details of the NAS Shares to which they have access. To do so:

1. In the Navigation tree under Devices, select the group that contains the device with the NAS Share to be viewed.

The list of devices in the group appears in the main panel.

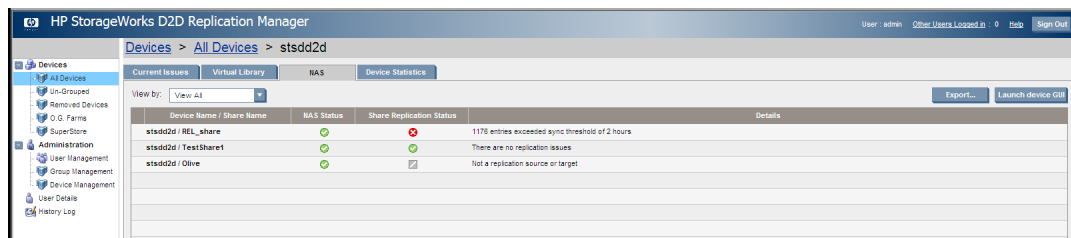


2. Select the radio button to select the appropriate device.
3. In the Action buttons, click **More Details**.

Device details are displayed, and the default view is the Current Issues tab.

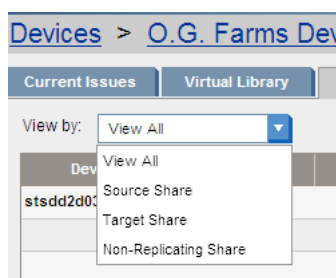
4. Click the **NAS** tab.

The NAS screen appears.



For each NAS Share on the device, the device and share name, NAS status, replication status, and details are listed.

5. To sort the list by a specific column, click the column title once to view by ascending order and twice to view by descending order.
6. To filter NAS Shares by type, select the type of shares to view (all, source, target, or non-replicating) in the **View by** field.

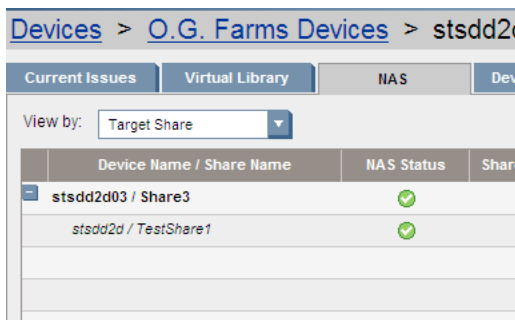


The screen refreshes to display only NAS Shares of that type.

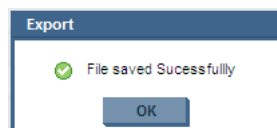
**NOTE:** If there are no NAS Shares of that type, the list appears but there are no entries.

**NOTE:** When viewing only Source Shares, click the + sign next to the share name to display the associated Target Share. Source Shares have only one Target Share.

When viewing only Target Shares, click the + sign next to the share name to display the associated Source Shares. Target Shares may have more than one Source Share.



7. To export the share information:
  - a. Click **Export** from the Action buttons.
  - b. In the **Select location for download [file name]** dialog box, navigate to the appropriate folder in which to save the file.
  - c. Ensure the file name is appropriate.
  - d. Click the **Save** button.A success dialog box appears.



- e. Click **OK** to close the dialog box.

- To launch the interface of the device on which the selected NAS Share resides, click **Launch Device GUI** from the Action buttons.

A new browser window opens displaying the device interface at the login screen. Refer to the user guide for that device or the device software for more information.

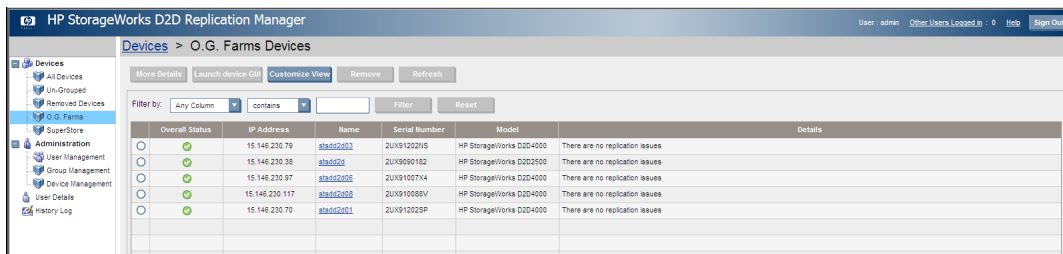
**NOTE:** If necessary, disable pop-up blockers on the web browser so that the new window can open.

**NOTE:** To view details for a different device within that group, click on **[group name] Devices** in the bread crumbs, then select the radio button of the device to view.

## Viewing device statistics

Users and administrators can view statistics for each device to which they have access. To do so:

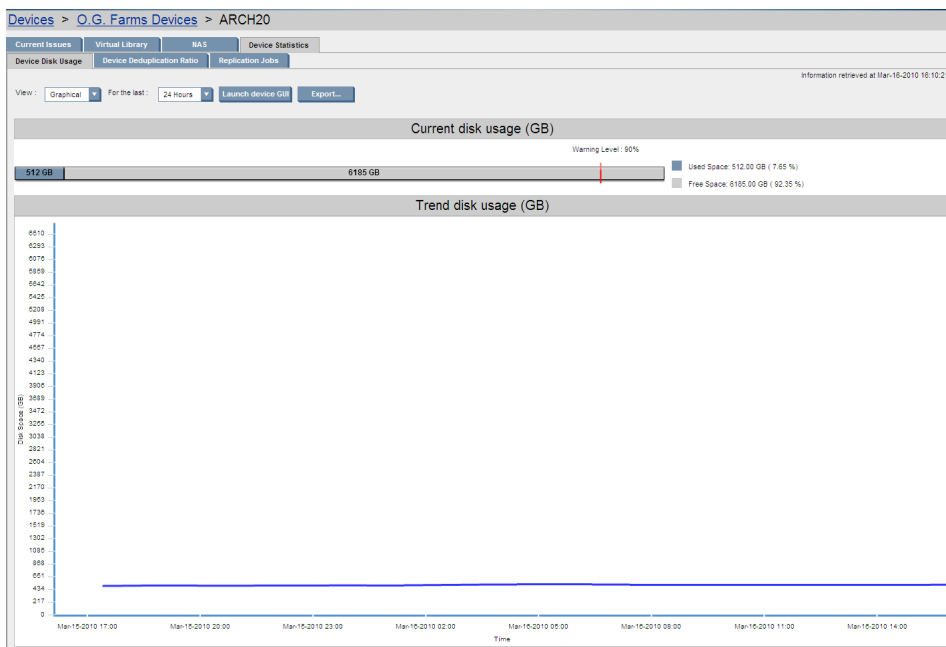
- In the Navigation tree under Devices, select the group that contains the device to be viewed. The list of devices in the group appears in the main panel.



The screenshot shows the HP StorageWorks D2D Replication Manager interface. The left navigation pane has 'Devices' selected, and 'O.G. Farms Devices' is chosen. The main panel displays a table of devices with columns for Overall Status, IP Address, Name, Serial Number, Model, and Details. All devices show 'There are no replication issues'.

Overall Status	IP Address	Name	Serial Number	Model	Details
<input type="radio"/>	15.148.230.79	snw02003	2UX9120216	HP StorageWorks D2D-4000	There are no replication issues
<input type="radio"/>	15.148.230.38	snw02004	2UX9090182	HP StorageWorks D2D-2500	There are no replication issues
<input type="radio"/>	15.148.230.97	snw02005	2UX91007X4	HP StorageWorks D2D-4000	There are no replication issues
<input type="radio"/>	15.148.230.117	snw02006	2UX910080V	HP StorageWorks D2D-4000	There are no replication issues
<input type="radio"/>	15.148.230.70	snw02001	2UX912023P	HP StorageWorks D2D-4000	There are no replication issues

- Select the radio button to select the appropriate device.
- In the Action buttons, click **More Details**.  
Device details are displayed, and the default view is the Current Issues tab.
- Click the **Device Statistics** Tab.  
The device statistics screen appears with the Device Disk Usage tab as the default.



5. Continue viewing the device statistics using one of the following procedures:

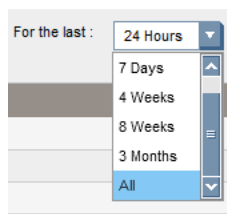
- “Viewing device disk usage” (page 31)
- “Viewing the device deduplication ratio” (page 33)
- “Viewing replication jobs” (page 36)

## Viewing device disk usage

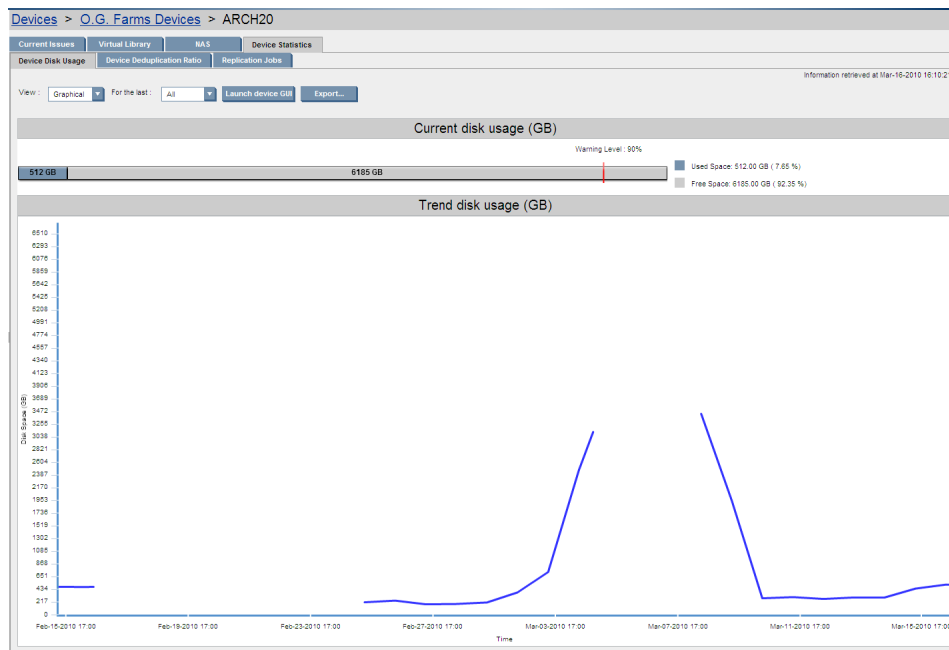
1. Follow the procedure in “Viewing device statistics” (page 30).
2. Click the **Device Disk Usage** tab.

For each device, the Current disk usage (GB) is listed and the Trend disk usage (GB) is presented as a graph. For the Trend disk usage graph, the default is to show information for the last 24 hours.

3. To change the amount of information included in the graph, select the appropriate time period (24 hours, 7 days, 4 weeks, 8 weeks, 3 months, or all) in the **For the last** field.



The screen refreshes, showing the trend information for the duration selected.



4. To view the information in table format:
  - a. Select the appropriate duration from the **For the last** field.
  - b. In the Action buttons area, from the **View** field, select **Tabular**.



The screen refreshes to display time stamp and disk usage information in table format.

Devices > O.G. Farms Devices > ARCH20

Current Issues Virtual Library NAS Device Statistics

Device Disk Usage Device Deduplication Ratio Replication Jobs

View: **Tabular** For the last: 24 Hours Launch device GUI Export...

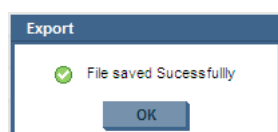
Information retrieved at Mar-16-2010 16:40:20

Date and Time	Disk Usage (GB)
Mar-15-2010 17:25	492
Mar-15-2010 18:25	497
Mar-15-2010 19:25	499
Mar-15-2010 20:25	495
Mar-15-2010 21:25	496
Mar-15-2010 22:25	498
Mar-15-2010 23:25	500
Mar-16-2010 00:25	502
Mar-16-2010 01:25	502
Mar-16-2010 02:25	509
Mar-16-2010 03:25	515
Mar-16-2010 04:25	517
Mar-16-2010 05:25	517
Mar-16-2010 06:25	516
Mar-16-2010 07:25	515
Mar-16-2010 08:25	515
Mar-16-2010 09:25	515
Mar-16-2010 10:25	515
Mar-16-2010 11:25	515
Mar-16-2010 12:25	514
Mar-16-2010 13:25	515
Mar-16-2010 14:25	515
Mar-16-2010 15:25	514
Mar-16-2010 16:25	512

**NOTE:** Select the appropriate value in the **For the last** field to change the information presented in the table.

5. To export the disk usage information:
  - a. Click **Export** from the Action buttons.
  - b. In the **Select location for download [file name]** dialog box, navigate to the appropriate folder in which to save the file.
  - c. Ensure the file name is appropriate.
  - d. Click the **Save** button.

A success dialog box appears.



- e. Click **OK** to close the dialog box.



6. To launch the device interface, click **Launch Device GUI** from the Action buttons.

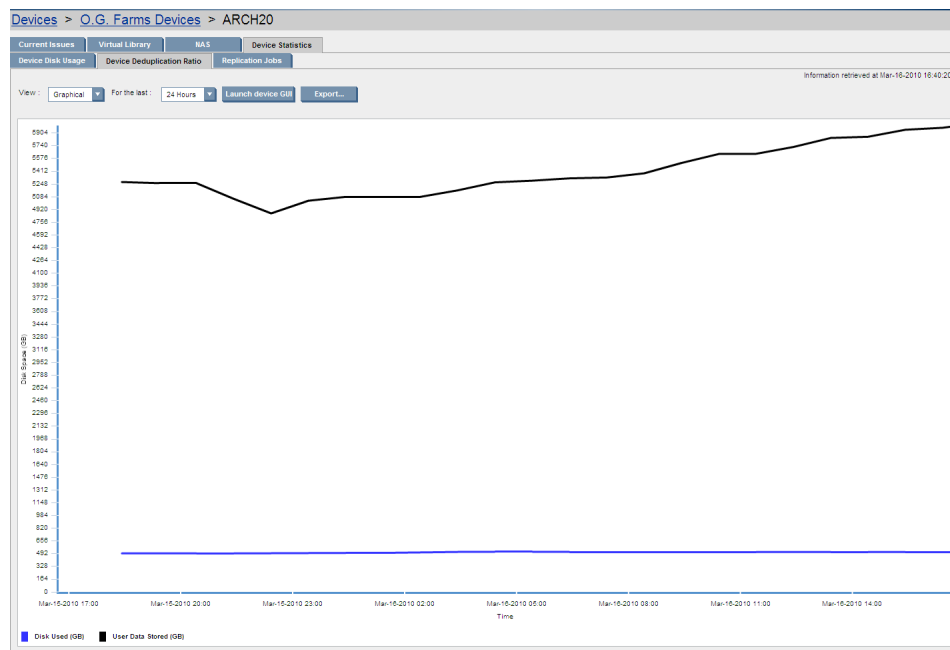
A new browser window opens displaying the device interface at the login screen. Refer to the user guide for that device or the device software for more information.

**NOTE:** If necessary, disable pop-up blockers on the web browser so that the new window can open.

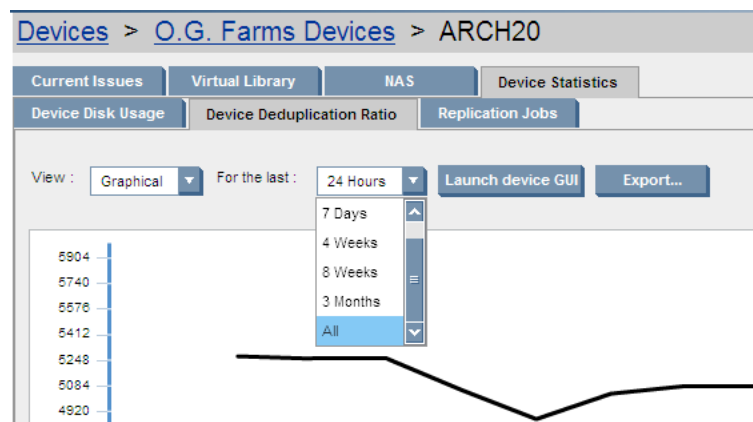
## Viewing the device deduplication ratio

1. Follow the procedure in “Viewing device statistics” (page 30).
2. Click the **Device Deduplication Ratio** tab.

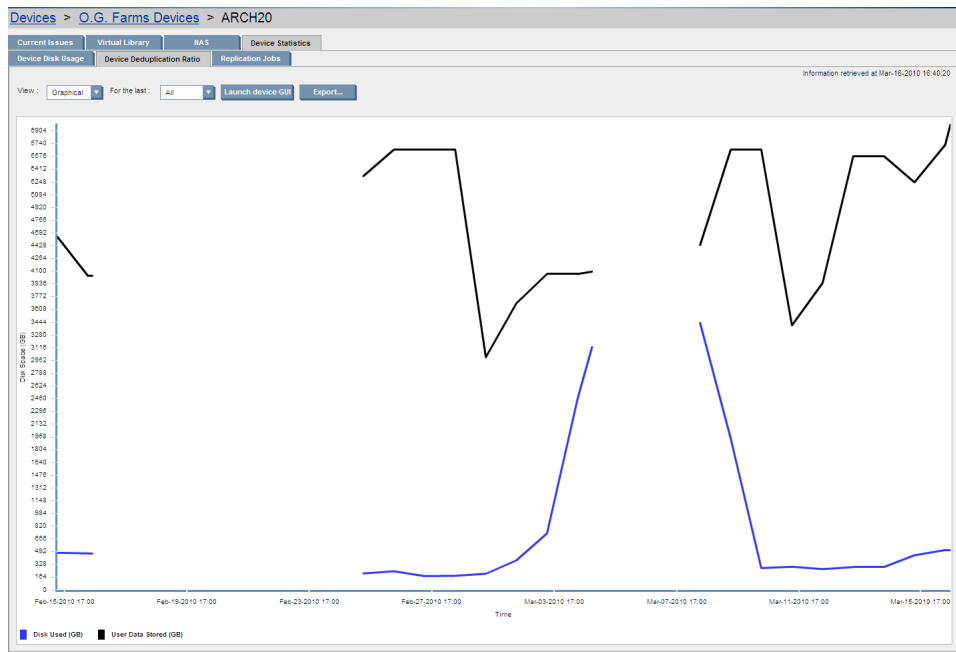
The deduplication activity for the device is presented as a graph. The default is to show information for the last 24 hours.



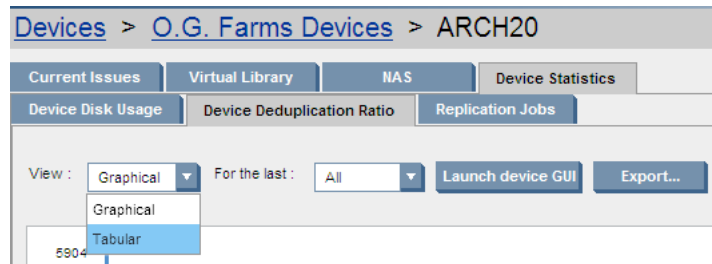
3. To change the amount of information included in the graph, select the appropriate time period (24 hours, 7 days, 4 weeks, 8 weeks, 3 months, or all) in the **For the last** field.



The screen refreshes to display the deduplication information for the duration selected.



4. To view the information in table format:
  - a. Select the appropriate duration from the **For the last** field.
  - b. In the Action buttons area, from the **View** field, select **Tabular**.



The screen refreshes to display time stamp and disk usage information in table format.

Devices > O.G. Farms Devices > ARCH20

Current Issues Virtual Library NAS Device Statistics

Device Disk Usage Device Deduplication Ratio Replication Jobs

View: **Tabular** For the last: All Launch device GUI Export...

Information retrieved at Mar-16-2010 16:40:20

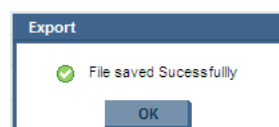
Date and Time	Disk Used (GB)	User Data Stored (GB)	Device deduplication ratio
Feb-15-2010 11:26	478	4543	9.50:1
Feb-16-2010 11:26	471	4039	8.58:1
Feb-16-2010 14:56	471	4039	8.58:1
Feb-18-2010 11:26	No data available	No data available	---
Feb-19-2010 11:26	No data available	No data available	---
Feb-20-2010 11:26	No data available	No data available	---
Feb-21-2010 11:26	No data available	No data available	---
Feb-22-2010 11:26	No data available	No data available	---
Feb-23-2010 11:26	No data available	No data available	---
Feb-24-2010 11:26	No data available	No data available	---
Feb-25-2010 11:21	212	5324	25.11:1
Feb-26-2010 11:21	240	5665	23.60:1
Feb-27-2010 11:21	178	5665	31.83:1
Feb-28-2010 11:21	183	5665	30.97:1
Mar-01-2010 11:21	209	2994	14.33:1
Mar-02-2010 11:21	380	3686	9.71:1
Mar-03-2010 11:21	729	4066	5.58:1
Mar-04-2010 11:21	2465	4066	1.65:1
Mar-04-2010 22:36	3124	4095	1.31:1
Mar-06-2010 11:26	No data available	No data available	---
Mar-07-2010 11:26	No data available	No data available	---
Mar-08-2010 11:19	3435	4437	1.29:1
Mar-09-2010 11:19	1948	5665	2.91:1
Mar-10-2010 11:19	281	5665	20.16:1
Mar-11-2010 11:19	299	3454	11.38:1
Mar-12-2010 11:25	289	3950	14.08:1
Mar-13-2010 11:25	294	5554	18.99:1
Mar-14-2010 12:25	294	5554	18.99:1
Mar-15-2010 12:25	448	5244	11.76:1
Mar-16-2010 12:25	514	5724	11.14:1
Mar-16-2010 16:40	511	5987	11.72:1

The screen refreshes to display the time stamp, the disk space used in GB, the amount of data backed up in GB, and the device deduplication ratio in table format.

**NOTE:** Select the appropriate value in the **For the last** field to change the information presented in the table.

5. To export the disk deduplication ratio information:
  - a. Click **Export** from the Action buttons.
  - b. In the **Select location for download [file name]** dialog box, navigate to the appropriate folder in which to save the file.
  - c. Ensure the file name is appropriate.
  - d. Click the **Save** button.

A Success dialog box appears.



- e. Click **OK** to close the dialog box.

6. To launch the device interface, click **Launch Device GUI** from the Action buttons.

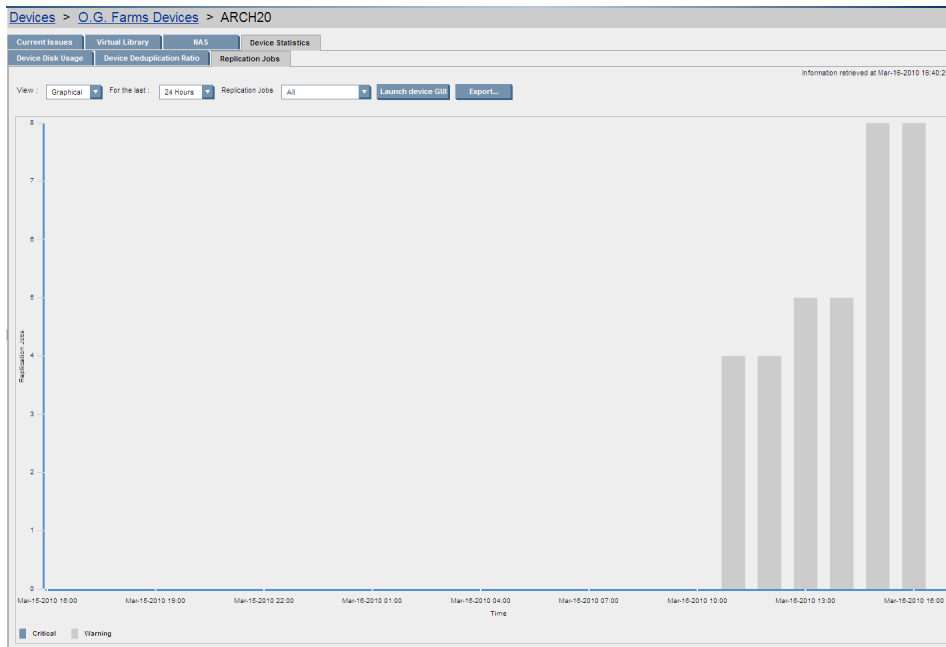
A new browser window opens displaying the device interface at the login screen. Refer to the user guide for that device or the device software for more information.

**NOTE:** If necessary, disable pop-up blockers on the web browser so that the new window can open.

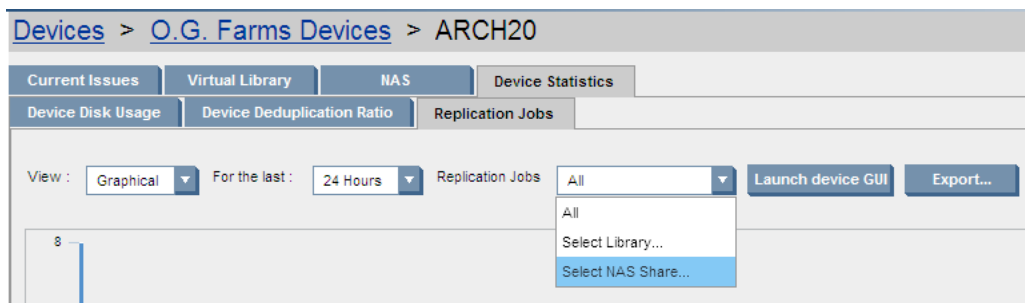
## Viewing replication jobs

1. Follow the procedure in “Viewing device statistics” (page 30).
2. Click the **Replication Jobs** tab.

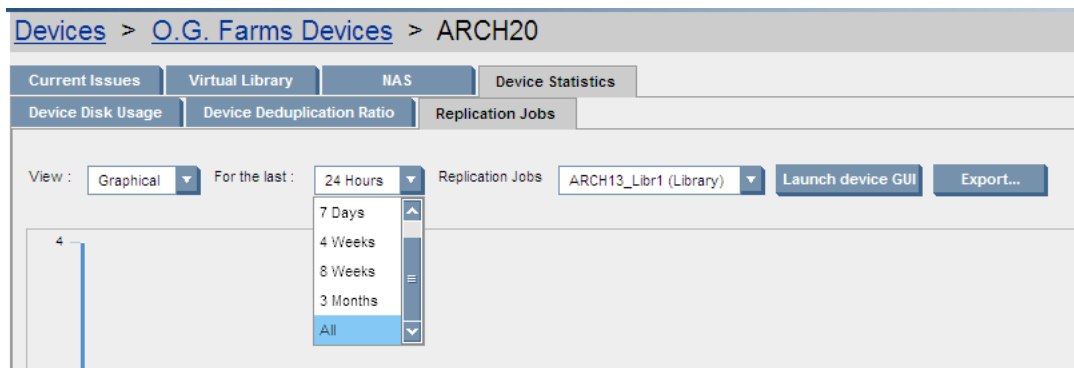
The Replication Jobs Trend for the device is presented as a graph. The default is to show information for all Libraries and NAS Shares on the device for the last 24 hours.



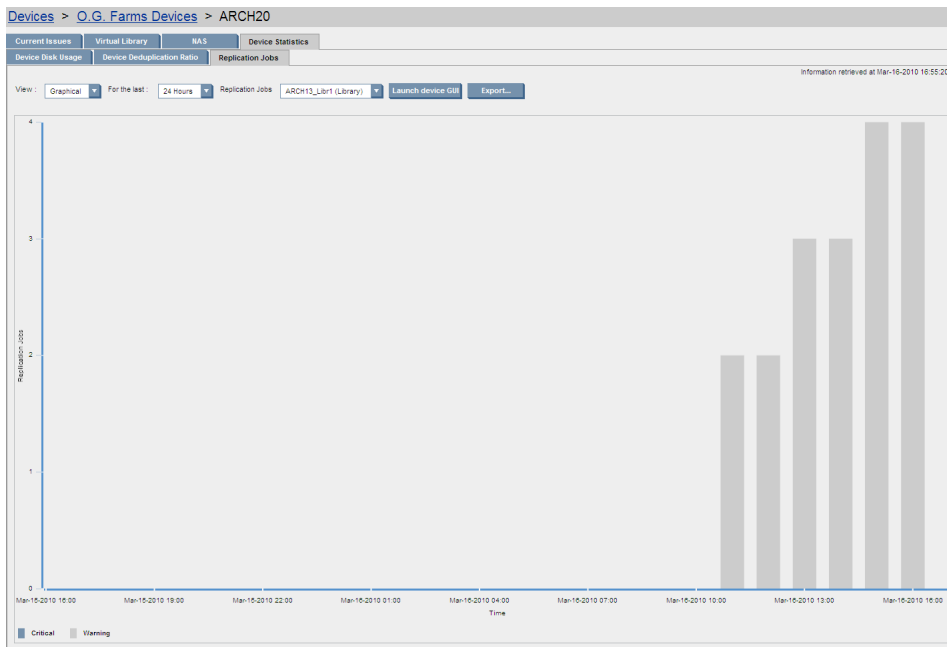
3. To display only libraries or only NAS Shares, select the appropriate device type from the **Replication Jobs** field.



4. To change the amount of information included in the graph, select the appropriate time period (24 hours, 7 days, 4 weeks, 8 weeks, 3 months, or all) in the **For the last** field.



The screen refreshes to display the replication jobs trend information for the type of device and the duration selected.



- [Devices](#) > [O.G. Farms Devices](#) > ARCH20

[Current Issues](#) | [Virtual Library](#) | [NAS](#) | [Device Statistics](#)

[Device Disk Usage](#) | [Device Deduplication Ratio](#) | [Replication Jobs](#)

View: Graphical For the last: 24 Hours Replication Jobs: ARCH13\_Lib1 (Library)
Launch device GUI Export...

4 Graphical Tabular

- Devices

>

O.G. Farms Devices

>

ARCH20

Current Issues

Virtual Library

MAS

Device Statistics

Device Disk Usage

Device Deduplication Ratio

Replication Jobs

View:

Tabular

For the last:

24 Hours

Replication Jobs

ARCH13\_Lbr1 (Library)

Launch device GUI

Export...

Information retrieved at Mar-16-2010 16:55:20

Date and Time	Number of jobs exceeding critical threshold	Number of jobs exceeding warning threshold
Mar-15-2010 18:00	0	0
Mar-15-2010 19:00	0	0
Mar-15-2010 19:00	0	0
Mar-15-2010 20:00	0	0
Mar-15-2010 21:00	0	0
Mar-15-2010 22:00	0	0
Mar-15-2010 23:00	0	0
Mar-16-2010 00:00	0	0
Mar-16-2010 01:00	0	0
Mar-16-2010 02:00	0	0
Mar-16-2010 03:00	0	0
Mar-16-2010 04:00	0	0
Mar-16-2010 05:00	0	0
Mar-16-2010 06:00	0	0
Mar-16-2010 07:00	0	0
Mar-16-2010 08:00	0	0
Mar-16-2010 09:00	0	0
Mar-16-2010 10:00	0	0
Mar-16-2010 11:00	0	2
Mar-16-2010 12:00	0	2
Mar-16-2010 13:00	0	3
Mar-16-2010 14:00	0	3
Mar-16-2010 15:00	0	4
Mar-16-2010 16:00	0	4
Mar-16-2010 16:00	0	4

Export

✔ File saved Successfully

OK

- e. Click **OK** to close the dialog box.
7. To launch the device interface, click **Launch Device GUI** from the Action buttons.  
A new browser window opens displaying the device interface at the login screen. Refer to the user guide for that device or the device software for more information.

---

**NOTE:** If necessary, disable pop-up blockers on the web browser so that the new window can open.

---

## Managing removed devices

Any devices that are removed using the procedure “[Removing a device](#)” (page 44) can be viewed, restored, or deleted permanently by an administrator. Once they are restored or permanently deleted, they no longer appear in the Removed Devices screen.

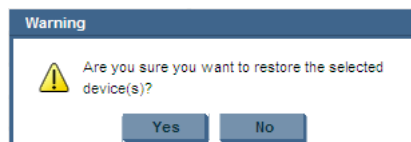
To view, restore, or permanently delete removed devices:

1. In the Navigation tree under Devices, select **Removed Devices**.  
A list of all devices that have been removed, but not restored or permanently deleted, appears in the content pane.

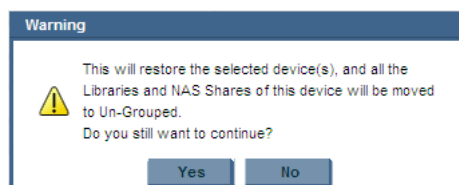


2. To restore one or more devices:
  - a. Select the box for each device to be restored.
  - b. Click the **Restore** button.

A Warning dialog box appears.

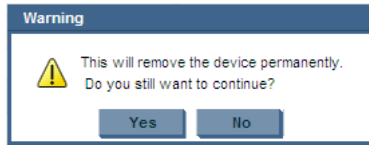


- c. Click **Yes** to continue.  
Another Warning dialog box appears.

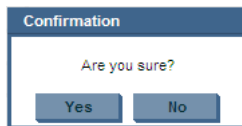


- d. Click **Yes** to restore the device.  
The restored device(s) is not listed in the Removed Devices screen.
- e. On the Navigation tree under Administrator, click **Device Management** and verify that the newly-restored device is listed.

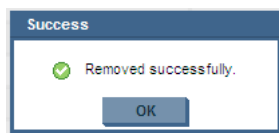
3. To permanently remove one or more devices:
  - a. Select the box for each device to be permanently removed.
  - b. Click the **Remove Permanently** button.  
A Warning dialog box appears.



- c. Click **Yes** to continue.  
A Confirmation dialog box appears.



- d. Click **Yes** to permanently remove the device.  
A Success dialog box appears.



- e. Click **OK** to close the dialog box.  
The permanently removed device(s) is not listed in the Removed Devices screen.

---

**NOTE:** Although it cannot be restored, the permanently removed device can be added again as a new device using the procedure ["Adding a device" \(page 14\)](#) .

---



---

## 5 Performing Administration procedures

On the Navigation tree, the Administration tasks are available only to administrators. From here, the administrator can perform a number of important procedures which fall into the following categories:

- “Managing the Authentication Mechanism ” (page 41)
- “Performing Device Management tasks” (page 43)
- “Performing User Management tasks” (page 45)
- “Performing Group Management tasks” (page 49)

---

**NOTE:** The Administration tasks are not available to and cannot be seen by anyone with user-level permissions.

---

### Managing the Authentication Mechanism

Replication Manager supports two types of authentication mechanisms:

- Local authentication—Replication Manager stores the authentication information.
- LDAP (Lightweight Directory Access Protocol) authentication—Replication Manager uses the information stored in the LDAP to authenticate users.

Replication Manager allows administrators to switch between these two types of authentication at any time.

### Changing from local to LDAP authentication

Changing from local to LDAP authentication allows users to use their LDAP credentials to log into the Replication Manager, rather than needing to use another User Id and Password to log in.

---

**NOTE:** Although users might have valid LDAP credentials, they cannot log in unless they have been added to Replication Manager by the administrator.

---

To change the authentication mechanism to LDAP:

1. From the Navigation tree, select **Administration**.
2. On the **Current Authentication Mechanism** tab, click **Switch to LDAP**.  
The Welcome screen of the wizard appears.
3. In the wizard, click **Next** to begin.  
The **LDAP Server** screen appears.
4. Enter the information for a valid LDAP server and click **Next**.
5. On the **Login** screen, enter the User Id and Password for the LDAP server that you added, then click **Next**.
6. On the **User Migration** screen, map the existing local users to their LDAP User Ids in the server being configured. To map a user, select the user in the table and enter the LDAP User Id. Then click **Next**.

---

**NOTE:** The default user `hprmsadmin` is authenticated using local authentication and is not included in this list.

---

7. On the **Summary** screen, review your information. You will not see the login credentials you provided.

8. Click **Finish** to switch the authentication mechanism from local authentication to LDAP authentication.  
A success dialog box appears.
9. Click **OK** to close the dialog box.

---

**NOTE:** When the authentication mechanism is switched from local authentication to LDAP, the system logs out all the users who are currently logged into Replication Manager, except for the default `hprmsadmin` user.

---

## Configuring LDAP authentication

To configure the LDAP authentication, use the following procedures:

- “Adding a new LDAP server” (page 42)
- “Modifying an LDAP server” (page 42)
- “Removing an LDAP server” (page 43)

### Adding a new LDAP server

- ❗ **IMPORTANT:** If you want to configure an LDAP server with the DIGEST-MD5 encryption mechanism, you must enter a fully-qualified name in the Server field. DIGEST-MD5 does not work with the Server IP.

To add a new LDAP server:

1. From the Navigation tree, select **Administration**.
2. On the **Current Authentication Mechanism** tab, click the **Add** button.  
The **Add a new LDAP server** dialog box appears.
3. Type the appropriate information into each field. When all the information is complete, click the **Add** button.
  - a. If you cannot connect to the LDAP server, an error message appears. Click **OK** to close the dialog box.
  - b. If the information is correct, a success message appears. Click **OK** to close the dialog box.

### Modifying an LDAP server

The modify option does not allow you to change an existing server to a new server. You can use either an IP address or a fully-qualified server name, depending on the encryption mechanism.

- ❗ **IMPORTANT:** If you want to modify an LDAP server with the DIGEST-MD5 encryption mechanism, you must enter a fully-qualified name in the Server field. DIGEST-MD5 does not work with the Server IP.

To modify an existing LDAP server:

1. From the Navigation tree, select **Administration**.
2. On the **Current Authentication Mechanism** tab, select the LDAP server to modify, and click the **Modify** button.  
The **Modify LDAP server** dialog box appears.

3. Modify the appropriate information, and click the **Modify** button.
  - a. If you cannot connect to the LDAP server, an error message appears. Click **OK** to close the dialog box.
  - b. If the information is correct, a success message appears, and all the users (except `hprmsadmin`) will be logged out. Click **OK** to close the dialog box.

## Removing an LDAP server

To remove an LDAP server:

1. From the Navigation tree, select **Administration**.
2. On the **Current Authentication Mechanism** tab, select the LDAP server to remove, and click the **Remove** button.

Two confirmation messages appear.

3. Click **Yes** twice to confirm removing the LDAP server. After removing the server, all users (except `hprmsadmin`) will be logged out.

## Changing from LDAP to local authentication

The administrator can change the authentication mechanism used by the Replication Manager to local authentication, which allows users to log into the system using their local credentials.

---

**NOTE:** All users who are associated with this LDAP server will be deactivated.

---

To change the authentication mechanism to local authentication:

1. From the Navigation tree, select **Administration**.
2. On the **Current Authentication Mechanism** tab, click the **Switch to Local Authentication** button.

A warning dialog box appears, stating that this will remove all your LDAP server configurations, and that user passwords will be reset to their user ids.
3. Click **Yes** to continue.

Another warning dialog box appears, asking you to confirm that you want to switch the authentication mechanism.
4. Click **Yes** to change the authentication mechanism to local authentication.

A success dialog box appears.
5. Click **OK** to close the dialog box.

---

**NOTE:** When the authentication mechanism is switched from LDAP to local authentication, the system logs out all the users who are currently logged into Replication Manager, except for the default `hprmsadmin` user.

---

**NOTE:** Except for the `hprmsadmin` user, the password for all users changes to `password`.

---

## Performing Device Management tasks

Administrators can select Device Management under Administration in the Navigation tree to perform the following procedures:

- [“Adding a device” \(page 14\)](#), presented in [“Configuring the Replication Manager” \(page 14\)](#)
- [“Modifying a device polling interval or IP address” \(page 44\)](#)
- [“Removing a device” \(page 44\)](#)

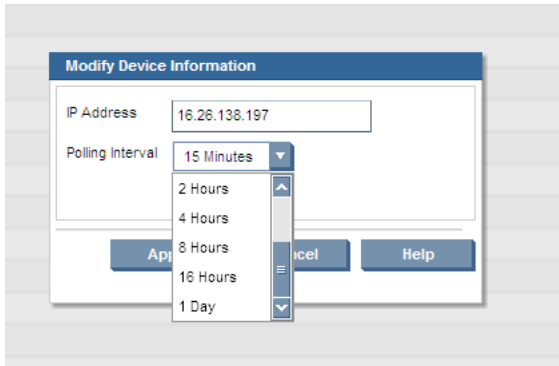
## Modifying a device polling interval or IP address

To modify the polling interval or IP address of a device:

1. From the Navigation tree under Administration, select **Device Management**.
2. Select the box to indicate the device to be modified.
3. In the Action buttons, click the **Modify** button.

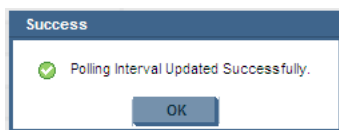
The Modify Device Information dialog box appears.

4. Select the appropriate interval from the Polling Interval field.



5. If appropriate, change the IP address by highlighting the current IP address, then typing in the correct information.
6. Click the **Apply** button.

A success dialog box appears.



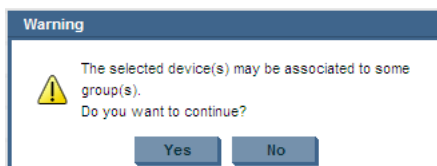
7. Click **OK** to close the dialog box.
- The updated polling interval appears in the **Polling Interval (in minutes)** column for that device.

## Removing a device

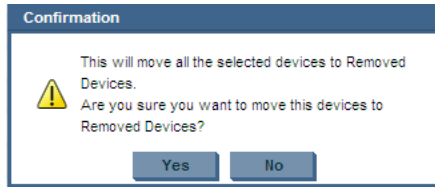
To remove a device:

1. From the Navigation tree under Administration, select **Device Management**.
2. Select the box to indicate the device to be removed.
3. In the Action buttons, click the **Remove** button.

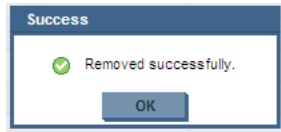
A warning dialog box appears.



4. Click the **Yes** button.
- A Confirmation dialog box appears.



5. Click the **Yes** button.  
A success dialog box appears.



6. Click **OK** to close the dialog box.  
The device is no longer included in the list of devices.

---

**NOTE:** The newly-removed device is included in the list of devices on the Removed Devices screen. To view Removed Devices, on the Navigation tree under Devices select **Removed Devices**. These devices can be viewed, restored, or permanently removed. [“Managing removed devices” \(page 39\)](#).

---

## Performing User Management tasks

The administrator can perform User Management tasks (under Administration in the Navigation tree) to modify details of any user or administrator account (see [“Modifying user details ” \(page 45\)](#)) or to remove a user or administrator from the Replication Manager (see [“Removing a user or administrator ” \(page 46\)](#)).

Users can also be added in the User Management section, as described in [“Adding new users or administrators” \(page 15\)](#) as part of [“Configuring the Replication Manager” \(page 14\)](#).

### Modifying user details

Administrators can modify details for users or administrators. The following procedures explain how to modify the information, depending on your current authentication setup.

Initially, the Replication Manager uses local authentication. You can change that to LDAP authentication. See [“Managing the Authentication Mechanism ” \(page 41\)](#) for more information.

#### Local authentication mechanism: modifying details for users or administrators

When modifying all user details within a local authentication environment:

1. From the Navigation tree under Administration, select **User Management**.
2. If you are an administrator modifying the information of another user, select the appropriate radio button to select the user to be modified.
3. Click the **Modify** actions button.

The Modify User Details dialog box appears.

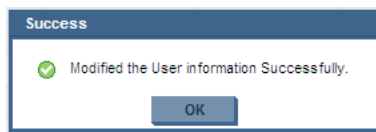
4. Highlight the existing information in the field to be modified, then type the appropriate information into the field (replacing the previous information).
5. Repeat this step for any other fields to be modified.
6. When all information is correct, click the **Submit** button.

---

**NOTE:** If any of the information does not meet the format requirements, the screen refreshes and displays an error message in red text above the User ID field specifying which field to correct. Enter the correct information and click the **Submit** button again.

---

7. The **Success** dialog box appears.



8. Click the **OK** button to exit the dialog box and return to the User Management screen.

## LDAP authentication mechanism: modifying details for users or administrators

---

**NOTE:** In an LDAP authentication environment, only the role of the users can be modified by any user with an administrative role. However, the default user `hprmsadmin` cannot be modified.

---

In an LDAP authentication environment, to change your role:

1. From the Navigation tree under Administration, select **User Management**.
2. On the **Active Users** tab, select the radio button next to your user ID, and click **Modify**.
3. In the **Modify User Details** window, click the appropriate radio button to modify the role of the user.
4. Click **Modify**.

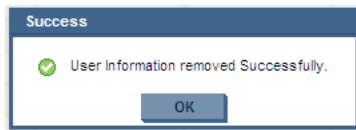
## Removing a user or administrator

Administrators can remove a user or another administrator using either the **Active Users** tab or the **Deactivated Users** tab.

## Removing a user from the Active Users tab

To remove a user or administrator from the **Active Users** tab:

1. From the Navigation tree under Administration, select **User Management**.
2. On the **Active Users** tab, select the appropriate radio button to select the user to be removed.
3. Click the **Remove** action button.  
A Warning dialog box appears, to confirm that the user should be removed.
4. Click the **Yes** button to confirm the selection.  
A Confirmation dialog box appears, to provide the last chance to keep the selected user.
5. Click the **Yes** button to remove the user.  
A Success dialog box appears, to confirm that the user and associated information was removed.



6. Click the **OK** button to close the dialog box and return to the Active Users screen.  
The user just removed is no longer included in the list of users.

## Removing a user from the Deactivated Users tab

To remove a user or administrator:

1. From the Navigation tree under Administration, select **User Management**.
2. On the **Deactivated Users** tab, select the appropriate radio button for the user to be removed, and click **Remove**.  
A Warning dialog box appears, to confirm that the user should be removed.
3. Click **Yes**.  
A Confirmation dialog box appears, to confirm the action.
4. Click **Yes** to remove the user.  
A success dialog box appears.
5. Click **OK** to close the dialog box and return to the Deactivated Users screen.  
The removed user is no longer included in the list of users.

## Deactivating a user

The administrator can deactivate and reactivate users. A deactivated user cannot log into Replication Manager.

To deactivate a user:

1. From the Navigation tree under Administration, select **User Management**.
2. On the **Active Users** tab, select the appropriate radio button for the user to be deactivated, and click **Deactivate**.  
A Warning dialog box appears.
3. Click **Yes** to continue.  
A confirmation dialog box appears.

4. Click **Yes** to deactivate the user.  
A Success dialog box appears.
5. Click **OK** to close the dialog box and return to the Active Users screen.

## Activating a user

The administrator can activate a user. The method of activation depends upon the current authentication mechanism.

### Local authentication mechanism: activating a user

To activate a user, when using the local authentication mechanism:

1. From the Navigation tree under Administration, select **User Management**.
2. On the **Deactivated Users** tab, select the appropriate radio button for the user to be activated, and click **Activate**.  
A Warning dialog box appears, which lists the groups that the user can access. These are the same groups that the user accessed before being deactivated.
3. Click **Yes** to activate the user.  
A Success dialog box appears.
4. Click **OK** to close the dialog box and return to the Deactivated Users screen.

### LDAP authentication mechanism: activating a user

To activate a user when using the LDAP authentication mechanism:

1. From the Navigation tree under Administration, select **User Management**.
2. On the **Deactivated Users** tab, select the appropriate radio button for the user to be activated, and click **Activate**.  
A Warning dialog box appears, which lists the groups that the user can access. These are the same groups that the user accessed before being deactivated.
3. Click **Yes** to activate the user.  
The **Activate User** window appears.
4. If you know the LDAP User Id of the user:
  - a. In the **Activate User** window, select the **LDAP User Id:** radio button, and type the Id.
  - b. If you are logged in as the `hprmsadmin` administrator, you must provide the login credentials of the LDAP from which you are adding the user. Otherwise, the system automatically displays the credentials that were provided upon login.
  - c. Click **Activate**.
5. If you only know the Email address of the user:
  - a. Select the **User Email Id:** radio button, and enter the user email address.
  - b. If you are logged in as the `hprmsadmin` administrator, you must provide the login credentials of the LDAP from which you are adding the user. Otherwise, the system automatically displays the credentials that were provided upon login.
  - c. Click **Validate**.  
If the user details are found in the LDAP server, the user email ID will be populated. Otherwise, an error message appears.
  - d. Click **Submit**.
6. If the information is correct, a Success dialog box appears.
7. Click **OK** to close the dialog box and return to the Deactivated Users screen.



---

**NOTE:** The newly activated user will have the same domain as the currently logged in user.

---

## Performing Group Management tasks

Administrators can select Group Management under Administration in the Navigation tree to perform the following procedures:

- “Creating a new group” (page 16), presented in “Configuring the Replication Manager” (page 14)
- “Modifying a group” (page 49)
- “Moving a library or NAS share from one group to another” (page 54)
- “Removing a group” (page 57)

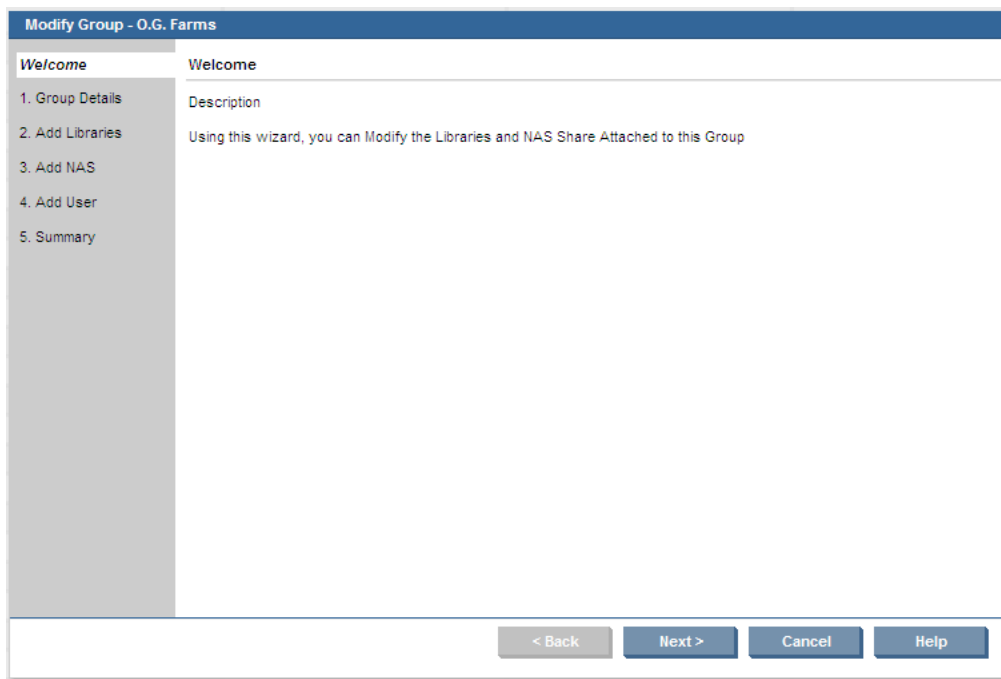
### Modifying a group

The administrator can modify most settings for any group. The procedures are slightly different for modifying the Un-Grouped group than they are for modifying any other group.

To modify any group other than Un-Grouped:

1. From the Navigation tree under **Administration**, click **Group Management**.
2. Select the radio button to select the group to be modified from the list on the main screen.
3. Click **Modify Group** in the Action buttons.

The Welcome screen of the **Modify Group — [group name]** wizard appears.



4. In the wizard, click the **Next** button to begin.
5. On the **1. Group Details** screen in the wizard, highlight to select the incorrect information and type the appropriate information into the field, replacing the incorrect information.

**Modify Group - O.G. Farms**

Welcome

**1. Group Details**

Enter Group Details :

\* Group Name  (Max 30 characters)

\* Group Description  (Max 50 characters)

Contact Number  (Numbers Only)

\* Mandatory fields

< Back   Next >   Cancel   Help

6. Click the **Next** button.
7. On the **2. Add Libraries** screen in the wizard, to change the libraries that belong to the group:

**Modify Group - O.G. Farms**

Welcome

**2. Add Libraries**

Select Libraries for this Group

**Ungrouped Libraries :**

Device Name	Library Name
ststd2d03	qa_7
ststd2d03	qaLibrary 1
ststd2d03	qaLibrary 2
ststd2d03	qaLibrary 3
ststd2d03	qa_8
ststd2d03	QA_prbu_1
ststd2d03	basanna
ststd2d01	Akshark
ststd2d01	Shark
ARCH20	Library 3
ARCH20	Library 4
ststd2d	ststd2d01_lib04
ststd2d	ststd2d01_lib01

**Selected Libraries :**

Device Name	Library Name
ststd2d08	LASourceLib
ARCH20	Library 2
ststd2d01	NirmaL_Test_Lib

Add All >   Add >   < Remove   < Remove All

< Back   Next >   Cancel   Help

- a. Click on the names of libraries in the Ungrouped Libraries table to be added to the group. To select several at a time, hold down the CTRL key on the keyboard and click each library to be added. The libraries will be highlighted in the table.
- b. Click the **Add** button between the two tables in the wizard. This moves the highlighted libraries from the Ungrouped Libraries table to the Selected Libraries table.

---

**NOTE:** To add all ungrouped libraries to the group, click the **Add All** button.

---

- c. To remove libraries added to the group, click the names of the libraries in the Selected Libraries table to be removed. To select several at a time, hold down the CTRL key on the keyboard and click each library to be added.
- d. Click the Remove button between the two tables in the wizard. This moves the highlighted libraries from the Selected Libraries table to the Ungrouped Libraries table.

---

**NOTE:** To remove all libraries from the group, click the **Remove All** button.

---

8. Click the **Next** button.
9. On the **3. Add NAS** screen in the wizard, if you wish to change NAS Shares that belong to the group:

**Modify Group - O.G. Farms**

Welcome

1. Group Details

2. Add Libraries

**3. Add NAS**

4. Add User

5. Summary

**3. Add NAS**

Select NAS for this Group

Ungrouped NAS :

Device Name	NAS Share Name
stsd2d	TestShare1

Selected NAS :

Device Name	NAS Share Name
stsd2d01	OST
stsd2d03	Share3

Add All >

Add >

< Remove

< Remove All

< Back Next > Cancel Help

- a. Click on the name of the NAS share in the Ungrouped NAS table to be added to the group. To select several at a time, hold down the CTRL key on the keyboard and click each NAS share to be added. The NAS Shares will be highlighted in the table.
- b. Click the **Add** button between the two tables in the wizard. This moves the highlighted shares from the Ungrouped NAS table to the Selected NAS table.

---

**NOTE:** To add all ungrouped NAS Shares to the group, click the **Add All** button.

---

- c. To remove a NAS share added to the group, click the name of the share in the Selected NAS table to be removed. To select several at a time, hold down the CTRL key on the keyboard and click each NAS share to be added.
- d. Click the **Remove** button between the two tables in the wizard. This moves the highlighted shares from the Selected NAS table to the Ungrouped NAS table.

---

**NOTE:** To remove all shares from the group, click the **Remove All** button.

---

10. Click the **Next** button.
11. On the **4. Add User** screen of the wizard:



**Modify Group - O.G. Farms**

Welcome

1. Group Details

2. Add Libraries

3. Add NAS

4. Add User

**5. Summary**

Summary

Group Name: O.G. Farms

Group Description: Organic farms, suppliers to O.G.Farms brand.

Contact Number: 8003737478

**Selected Libraries :**

Device Name	Library Name
stdd2d08	LASourceLib
ARCH20	Library 2
stdd2d01	Nirmal_Test_Lib
stdd2d03	qa_7
ARCH20	Library 4

**Selected NAS :**

Device Name	NAS Share Name
stdd2d01	OST
stdd2d03	Share3

**Selected Users :**

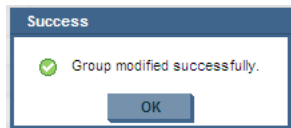
User
OGFarms_Pat

< Back Finish Cancel Help

Use Back button to make any changes to the information for the group.

- Once the information is correct, click the **Finish** button.

The Success dialog box appears.



- Click the **OK** button to exit the dialog box and return to the Group Management screen.

To modify Un-Grouped:

- From the Navigation tree under **Administration**, click **Group Management**.
- Select the radio button to select the group called **Un-Grouped** from the list on the main screen.
- Click **Modify Group** in the Action buttons.

The Add User – Un-Grouped dialog box appears.

- Click on the name of the user in the Available Users table to be added to the group. To select several at a time, hold down the CTRL key on the keyboard and click each name to be added. The users will be highlighted in the table.
- Click the **Add** button between the two tables in the wizard. This moves the highlighted users from the Available Users table to the Selected Users table.

**NOTE:** To add all users to the group, click the **Add All** button.

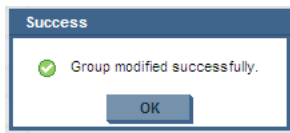
- To remove a user added to the group, click the name of the user in the Selected Users table to be removed. To select several at a time, hold down the CTRL key on the keyboard and click each name to be added.
- Click the **Remove** button between the two tables in the wizard. This moves the highlighted users from the Selected Users table to the Available Users table.

---

**NOTE:** To remove all users from the group, click the **Remove All** button.

---

- Once the information is correct, click the **Submit** button.  
The Success dialog box appears.



- Click the **OK** button to exit the dialog box and return to the Group Management screen.

---

**NOTE:** This same list of groups can be viewed by selecting **Devices** from the Navigation tree.

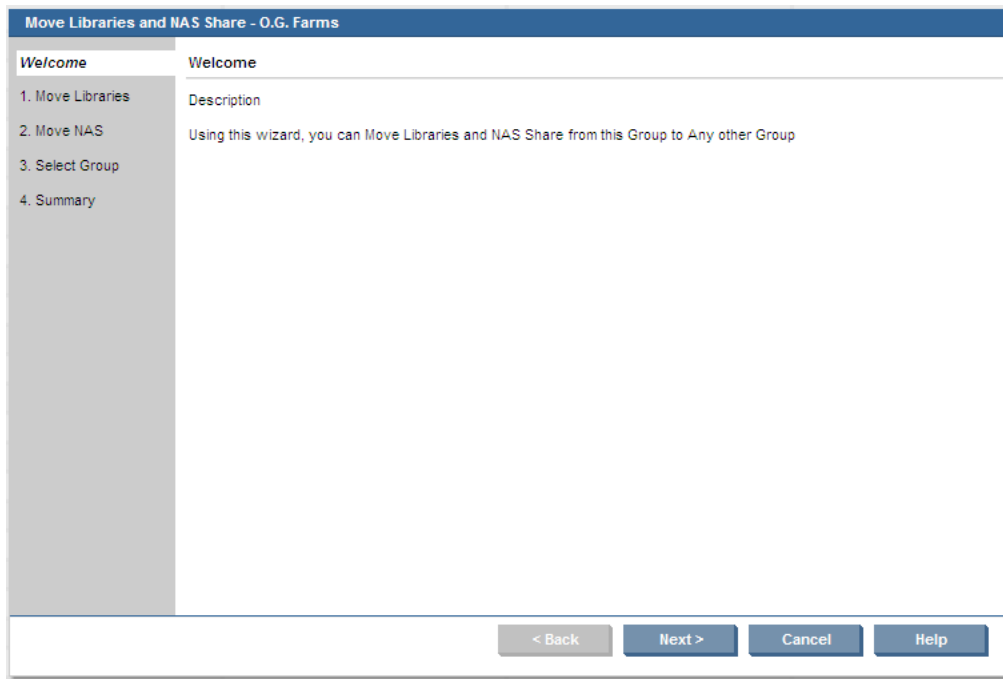
---

## Moving a library or NAS share from one group to another

The administrator can move libraries and NAS Shares from any group to any other group. To do so:

- From the Navigation tree under **Administration**, click **Group Management**.
- On the main screen, select the radio button to select the group containing the library or NAS share to be moved.
- Click **Move** in the Action buttons.

The Welcome screen of the **Move Libraries and NAS Share — [group name]** wizard appears.



- In the wizard, click the **Next** button to begin.
- On the **1. Move Libraries** screen, to select the libraries to move:

**Move Libraries and NAS Share - O.G. Farms**

Welcome

**1. Move Libraries**

Select Libraries from this Group

Select Libraries :

Device Name	Library Name
ARCH20	Library 2
stda2d01	Nirmal_Test_Lib
stda2d03	qa_7
ARCH20	Library 4
stda2d08	LASourceLib

Add All >

Add >

< Remove

< Remove All

Selected Libraries :

Device Name	Library Name

< Back   Next >   Cancel   Help

- Click on the names of libraries in the Select Libraries table to be removed from the group and added to another group. To select several at a time, hold down the CTRL key on the keyboard and click each library to be moved. The libraries will be highlighted in the table.
- Click the **Add** button between the two tables in the wizard. This moves the highlighted libraries from the Select Libraries table to the Selected Libraries table.

**NOTE:** To move all libraries from the Select Libraries table to the Selected Libraries table, click the **Add All** button.

- If any library appears on the Selected Libraries table, but should be added back to the Select Libraries table, click the name of the library. To select several at a time, hold down the CTRL key on the keyboard and click each library to be removed from the Selected Libraries table.
- Click the **Remove** button between the two tables in the wizard. This moves the highlighted libraries from the Selected Libraries table to the Select Libraries table.

**NOTE:** To remove all libraries from the Selected Libraries table, click the **Remove All** button.

- Click the **Next** button.
- On the **2. Move NAS** screen in the wizard, to select the NAS Shares to move:

**Move Libraries and NAS Share - O.G. Farms**

Welcome

1. Move Libraries

**2. Move NAS**

3. Select Group

4. Summary

Select NAS from this Group

Select NAS :

Device Name	NAS Share Name
std2d01	OST
std2d03	Share3

Selected NAS :

Device Name	NAS Share Name

Add All >

Add >

< Remove

< Remove All

< Back Next > Cancel Help

- Click on the names of the NAS shares in the Select NAS table to be removed from this group and moved to another group. To select several at a time, hold down the CTRL key on the keyboard and click each NAS to be moved. The NAS Shares will be highlighted in the table.
- Click the **Add** button between the two tables in the wizard. This moves the highlighted NAS Shares from the Select NAS table to the Selected NAS table.

**NOTE:** To move all Selected NAS Shares to the Selected NAS table, click the **Add All** button.

- If any NAS Share appears on the Selected NAS table, but should be added back to the Select NAS table, click the name of the NAS Share. To select several at a time, hold down the CTRL key on the keyboard and click each NAS Share to be removed from the Selected NAS table.
- Click the **Remove** button between the two tables in the wizard. This moves the highlighted NAS Shares from the Selected NAS table to the Select NAS table.

**NOTE:** To remove all NAS Shares from the Selected NAS table, click the **Remove All** button.

- Click the **Next** button.
- On the **3. Select Group** screen of the wizard, select the group in which the libraries and NAS Shares will reside from the Select Target Group field.
- Click the **Next** button.
- On the **4. Summary** screen of the wizard, review the information for correctness.



**Move Libraries and NAS Share - O.G. Farms**

Welcome

1. Move Libraries

2. Move NAS

3. Select Group

**4. Summary**

Summary

**Selected Group:** SuperStore

**Selected Libraries :**

Device Name	Library Name
ststd2d03	qa_7
ststd2d08	LASourceLib

**Selected IAS :**

Device Name	NAS Share Name
ststd2d01	OST

< Back   Finish   Cancel   Help

Use Back button to make any changes to the information.

- Once the information is correct, click the **Finish** button.  
The Success dialog box appears.

**Success**

✓ Group modified successfully.

OK

- Click the **OK** button to exit the dialog box and return to the Group Management screen.

## Removing a group

Administrators can remove an entire group from Replication Manager:

- From the Navigation tree under Administration, select **Group Management**.
- Select the appropriate radio button to select the group to be removed.
- Click the **Remove** actions button.

A Warning dialog box appears, to confirm that the group should be removed.

**Warning**

⚠ Are you sure you want to remove the selected group?

Yes   No

- Click the **Yes** button to confirm the selection.

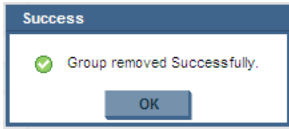
A Confirmation dialog box appears, to provide the last chance to keep the selected group.

**Confirmation**

Are you sure?

Yes   No

5. Click the **Yes** button to remove the group.  
A Success dialog box appears, to confirm that the group was removed.



6. Click the **OK** button to close the dialog box and return to the Group Management screen.  
The group just removed is no longer included in the list of groups.

---

**NOTE:** Removing a group moves the devices from that group to Un-Grouped. Un-Grouped, itself, cannot be removed.

---

## 6 Modifying user details

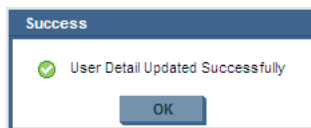
User details such as contact information and passwords can be modified by using the following procedures:

- “Adding user contact information” (page 59)
- “Modifying a password” (page 60)

### Adding user contact information

Each user and administrator can add detailed contact information to his or her account using the following procedure:

1. In the Navigation tree, click **User Details**.  
The User Details fields appear in the content pane, with the user name with which you logged in pre-populated.
2. To change the full name, highlight the current full name in the Full Name field, then type in the appropriate value. There is a 64 character maximum for this field.
3. To update an email address, click in the Email ID field and type in the appropriate email address.
4. To update the phone number, click in the Contact Number field and type in the appropriate telephone number.  
Input numbers only; dashes (-) and periods (.) are not recognized and will return an “Enter Valid Contact Number” error message.
5. Click the **Update** button to save the new values.  
If information was added incorrectly, an appropriate error message appears above the User ID. Correct the error and click the Update button again.  
If the information is entered so that it meets the criteria, the Success dialog box appears. Click the **OK** button to continue.

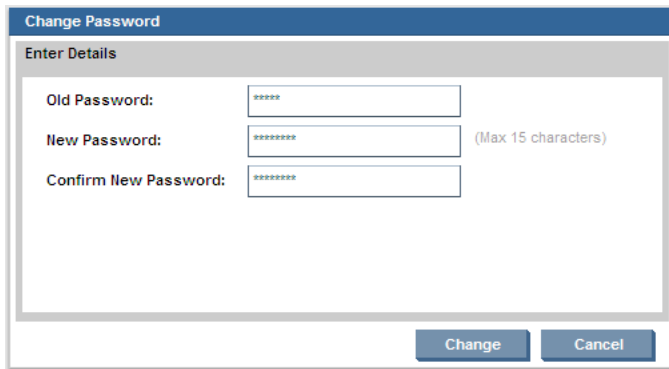


## Modifying a password

This feature is enabled only when the authentication mechanism is Local. When the authentication mechanism is LDAP, the user must change his password in LDAP.

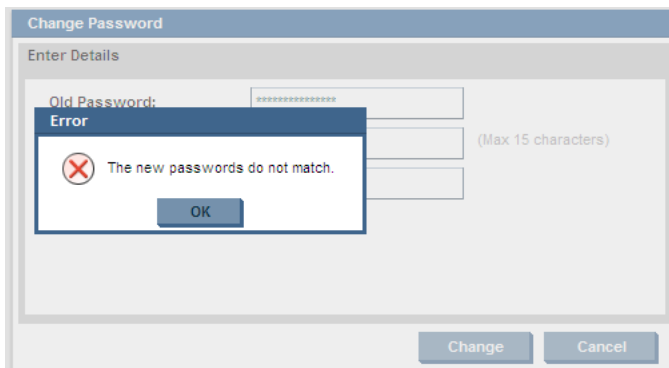
Each user and administrator can change his or her password using the following procedure:

1. In the Navigation tree, click **User Details**.  
The User Details fields appear in the content pane, with the current user contact information pre-populated.
2. Click the **Change Password** button.  
The Change Password dialog box appears.
3. Enter the current password into the **Old Password** field, then type the new password into both the **New Password** and **Confirm New Password** fields.  
Characters are displayed as asterisks (\*).



The 'Change Password' dialog box is shown. It has a title bar 'Change Password' and a sub-header 'Enter Details'. Inside, there are three input fields: 'Old Password:' with 5 asterisks, 'New Password:' with 7 asterisks and a '(Max 15 characters)' note, and 'Confirm New Password:' with 7 asterisks. At the bottom right are 'Change' and 'Cancel' buttons.

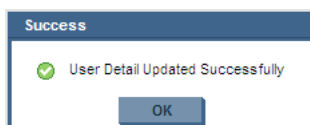
4. Click the **Change** button.  
If the passwords typed in the New Password and Confirm New Password fields are not the same, an error dialog box appears.



The 'Change Password' dialog box is shown with an error message. An 'Error' dialog box is overlaid on top, with a red 'X' icon and the text 'The new passwords do not match.' and an 'OK' button. The background dialog box shows the same fields as before, but the 'New Password' and 'Confirm New Password' fields now contain different numbers of asterisks (8 and 7 respectively).

Click the **OK** button to continue, and retry the previous step.

If the information meets the criteria and both New Password and Confirm New Password fields match, the Success dialog box appears. Click the **OK** button to continue.



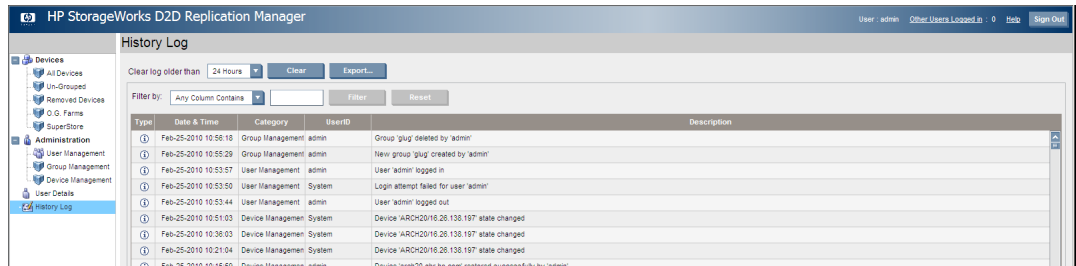
The 'Success' dialog box is shown. It has a title bar 'Success' and a green checkmark icon followed by the text 'User Detail Updated Successfully' and an 'OK' button.

## 7 Managing the history log

Each user can view the history log for all devices to which the user has access. The administrator can view the history log for all devices. To do so, use the following procedure.

1. On the Navigation tree, click **History Log**.

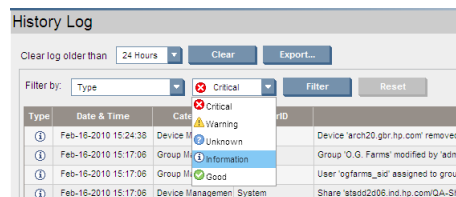
The History Log appears in the main screen showing all log entries in ascending order by date.



2. To sort the entries by a specific column, click the column name. The entries are listed in ascending order according to the selected column. Click the column name again to sort in descending order.

**NOTE:** Click twice on the title **Type** to display the most severe log entries first. They will appear in the following order: critical, warning, unknown, information, normal, and good. (Clicking on Type only once will display the least severe log entries first.)

3. To view a subset of the entries, use the List Item Filter.
  - a. In the left-most **Filter by** field, select the column by which to filter or select **Any Column Contains**.
  - b. In the right-most **Filter by** field, type in or select the appropriate value(s).



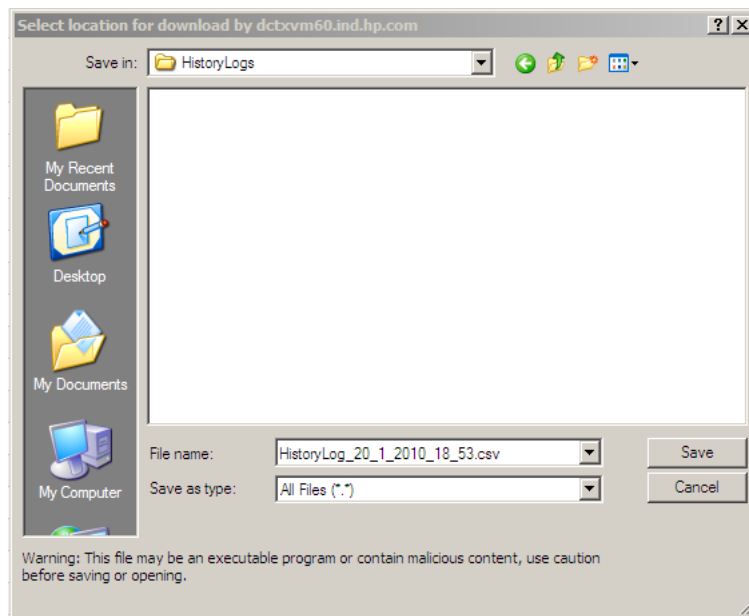
- c. Click the **Filter** button.

The content pane displays only those items in the log that meet the filter criteria.

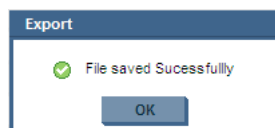
**NOTE:** The ability to filter log entries will become important as the list of log entries grows to include Critical and Warning entries.

- d. To view all entries in the log again, click the **Reset** button.
4. To export the History Log:
    - a. Filter the History Log to display the items to be included in the export file.
    - b. Click the **Export** button.

The **Select Location for Download [filename]** dialog box appears.



- c. Navigate to the folder in which to save the log.
  - d. If appropriate, change the default file name.
  - e. Click the **Save** button.
- An Export success dialog box appears.

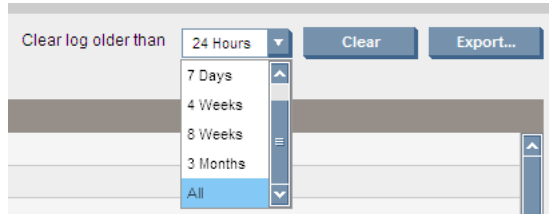


- f. Click **OK** to return to the History Log.

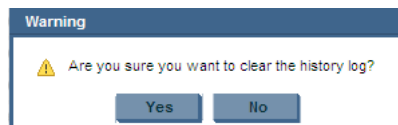
5. Users with administrator-level permissions can clear the History Log. To do so:

**NOTE:** Clearing items from the History log deletes the items permanently; there is no way to restore cleared/deleted items. HP advises that the History Log be exported before any items are cleared.

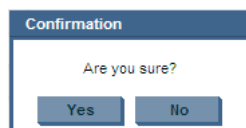
- a. Use the List Item Filter, if appropriate, to display only those items you wish to clear.
- b. Select the appropriate value from the **Clear log older than** field.



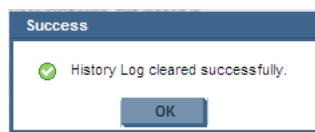
- c. Click the **Clear** button.  
A Warning dialog box appears.



- d. Click **Yes** to continue.  
A Confirmation dialog box appears.



- e. Click **Yes** to clear the displayed items from the History Log.  
A Success dialog box appears.



- f. Click **OK** to close the dialog box.  
Only those items that were both displayed after the filter was applied and older than the selected time frame are cleared from the log. All other items remain.

## 8 Backing-up and restoring the Replication Manager database

The administrator uses the backup and restore utility to make periodic backups of the configuration and device data that is stored in the system Replication Manager.

Taking periodic backup of the database will help in restoring the configuration data if the Replication Manager crashes at a later point in time.

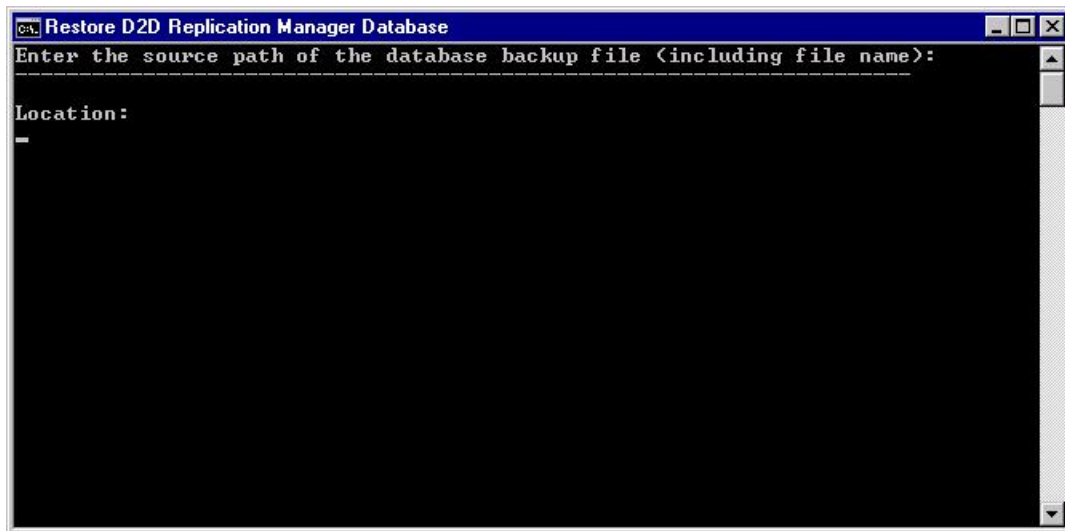
### Backing-up the Replication Manager database

**NOTE:** The utility is only accessible on the server on which the Replication Manager is installed.

To back up the information on the Replication Manager database:

1. On the host server, click the **Start** button.
2. Select **All Programs**.
3. Select **Backup D2D Replication Manager Database**.

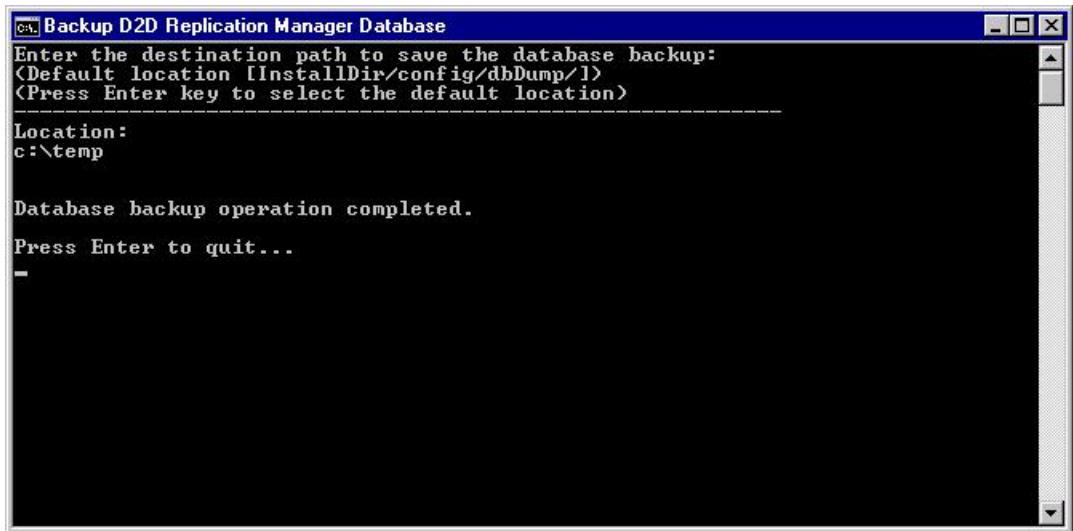
The utility opens and runs in a new command window.



4. At the prompt, perform one of the following tasks:
  - Choose the default location for the backup file (InstallDir/config/dbDump) by pressing the Enter key.
  - Enter a folder path to store the database backup file, then press the Enter key.



5. The database backup is created and the backup file is stored at the specified location.



The log entries for the backup utility are available in the DB\_BackupRestoreLog.log file located at InstallDir\log folder.

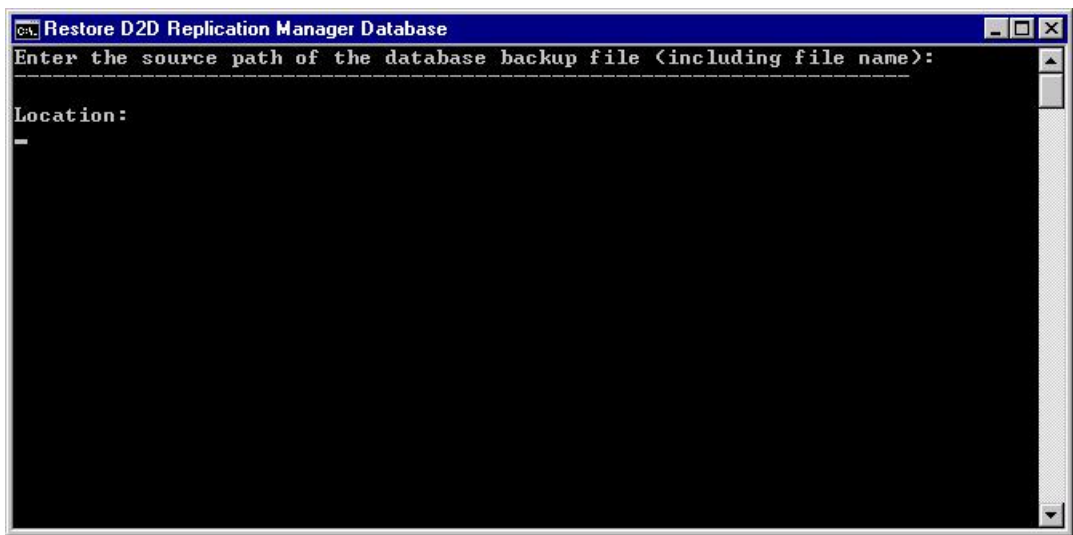
## Restoring the Replication Manager database

This utility helps restore a previous backup of the configuration and device database for Replication Manager. If the installed software crashes, and the data is not recoverable, uninstall the current installation completely, perform a fresh installation of the Replication Manager, and then use this restore utility to restore the backup. This utility will import and update all the data to the current system.

To restore backup information to the Replication Manager database:

1. On the host server, click the **Start** button.
2. Select **All Programs**.
3. Select **Restore D2D Replication Manager Database**.

The utility opens and runs in a new command window.



4. At the prompt, type the location of the database backup file and the file name.

5. The backup copy of the database information is restored to the Replication Manager.



```
Restore D2D Replication Manager Database
Enter the source path of the database backup file <including file name>:
-----
Location:
c:\temp\D2DRMSdb.dump
Stopping HP D2D Replication Manager service...
The HP StorageWorks D2D RMS service was stopped successfully.
Database restore successful.
Starting HP D2D Replication Manager service...
The HP StorageWorks D2D RMS service is starting.
The HP StorageWorks D2D RMS service was started successfully.

Press Enter key to quit...
-
```

---

**NOTE:** This procedure can be used to duplicate the Replication Manager system onto another server.

---

## 9 Command Line Interface for the Replication Manager

The Command Line Interface (CLI) provides a way to access the Replication Manager using the command prompt, in addition to using the existing browser-based graphical user interface (GUI). Users can access the Replication Manager using a command line console.

### Changing the port used by the CLI

The CLI tries to connect to the replication manager on port 3095 by default. If you configured the replication manager server to run on another port, you must configure the CLI to use that port.

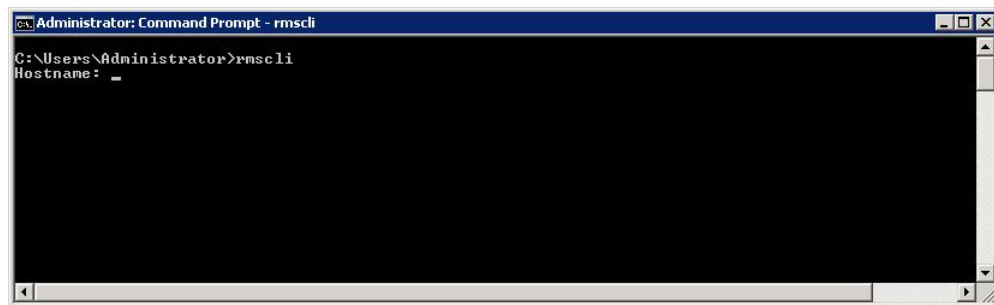
To change the port used by the CLI:

1. Update the server port defined in the `RMSCliClient.cfg` file that is located in the `[InstallDir]/config` folder.
2. Restart the CLI.

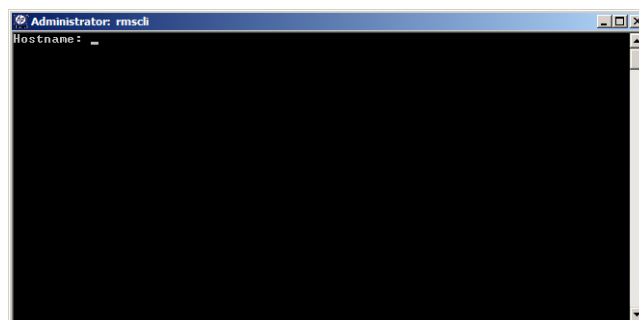
### Launching the command line client

To launch the command line client:

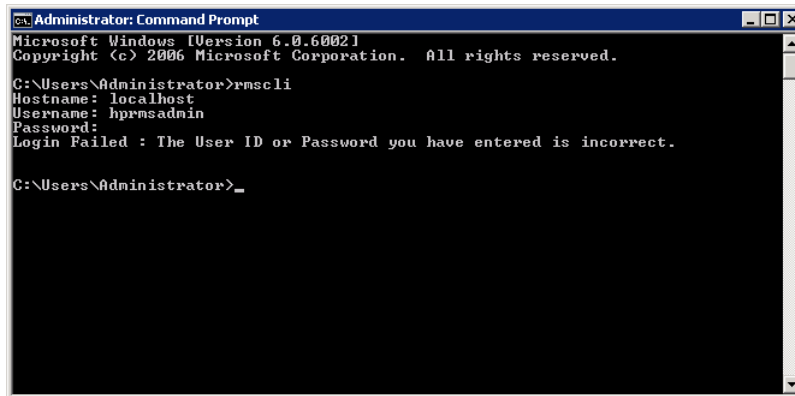
1. Choose one of the following options:
  - Open a command prompt and enter the following command:  
`rmscli`



- Select **Start** → **All Programs** → **Hewlett Packard** → **HP D2D Replication Manager** → **Command Line Client**.



2. To enter the Replication Manager through the CLI, choose one of the following options:
  - Enter the hostname and IP address of the server where Replication Manager is installed. Then enter your User Id and Password.  
If there is an error, the CLI client displays the error description.

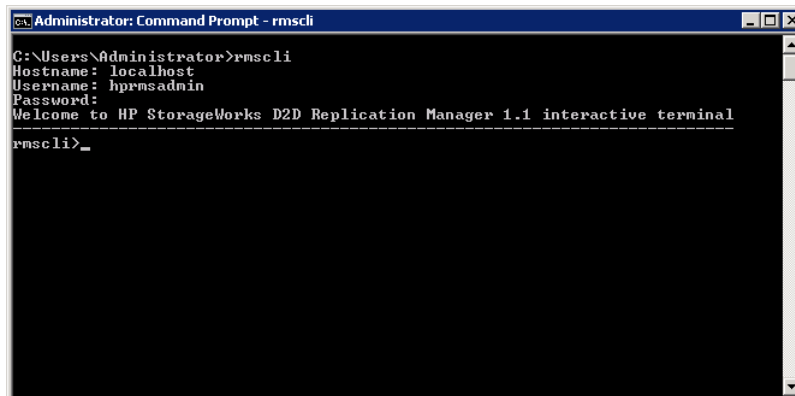


```
Administrator: Command Prompt
Microsoft Windows [Version 6.0.6002]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>rmcli
Hostname: localhost
Username: hprmsadmin
Password:
Login Failed : The User ID or Password you have entered is incorrect.

C:\Users\Administrator>_
```

Upon successful login, the shell prompt appears.



```
Administrator: Command Prompt - rmcli
C:\Users\Administrator>rmcli
Hostname: localhost
Username: hprmsadmin
Password:
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal
rmcli>_
```

- Enter the following command:  
`rmcli -h <Host name/Host IP> -u <User ID> -p <password>`  
If there is an error, the CLI client displays the error description.  
Upon successful login, the shell prompt appears.

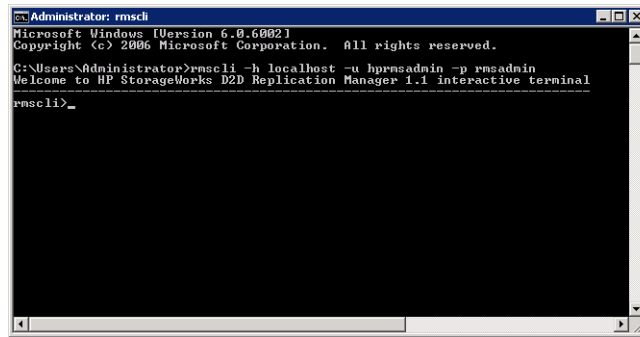
---

**NOTE:** If you omit any parameters in the `rmcli` command, the system prompts you for the omitted parameters. For example, if you provide only the host name, the system prompts for the User Id and Password.

If the current authentication mechanism is LDAP, you must enter the User Id in the following format:

domain name / user id

---



```
Administrator: rmscli
Microsoft Windows [Version 6.0.6002]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>rmscli -h localhost -u hprasadain -p rmsadain
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal

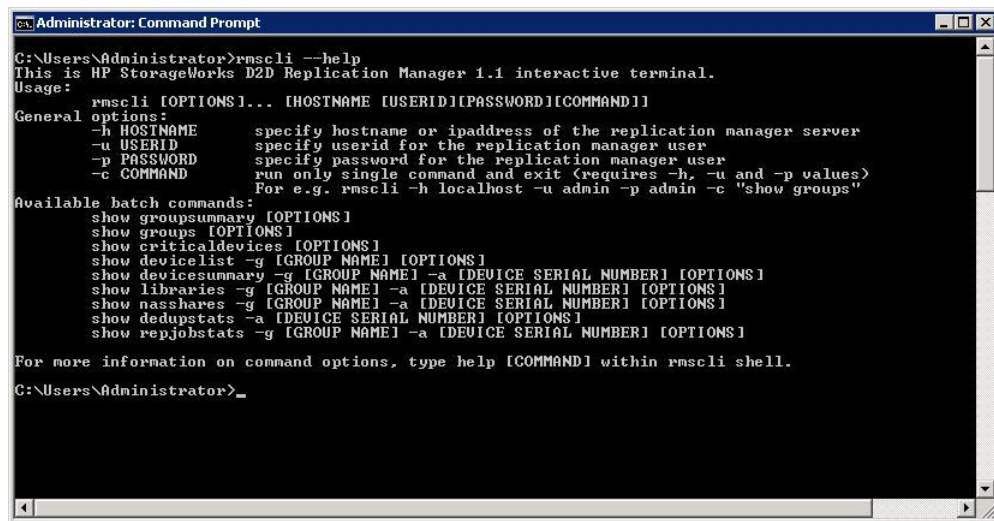
rmscli>
```

## Using HELP for the CLI Client

To view the details about how to use the CLI Client:

- Choose one of the following options:
  - To view help content without logging into Replication Manager, open a command prompt and enter the following command:

```
rmscli --help
```



```
Administrator: Command Prompt

C:\Users\Administrator>rmscli --help
This is HP StorageWorks D2D Replication Manager 1.1 interactive terminal.
Usage:
    rmscli [OPTIONS]... [HOSTNAME [USERID][PASSWORD][COMMAND]]
General options:
    -h HOSTNAME      specify hostname or ipaddress of the replication manager server
    -u USERID       specify userid for the replication manager user
    -p PASSWORD      specify password for the replication manager user
    -c COMMAND       run only single command and exit (requires -h, -u and -p values)
                    For e.g. rmscli -h localhost -u admin -p admin -c "show groups"
Available batch commands:
    show groupsummary [OPTIONS]
    show groups [OPTIONS]
    show criticaldevices [OPTIONS]
    show devicelist -g [GROUP NAME] [OPTIONS]
    show devicesummary -g [GROUP NAME] -a [DEVICE SERIAL NUMBER] [OPTIONS]
    show libraries -g [GROUP NAME] -a [DEVICE SERIAL NUMBER] [OPTIONS]
    show nasshares -g [GROUP NAME] -a [DEVICE SERIAL NUMBER] [OPTIONS]
    show dedupstats -a [DEVICE SERIAL NUMBER] [OPTIONS]
    show repjobstats -g [GROUP NAME] -a [DEVICE SERIAL NUMBER] [OPTIONS]
For more information on command options, type help [COMMAND] within rmscli shell.
C:\Users\Administrator>
```

- To view help content after logging into Replication Manager, enter the following command:  
help

## Listing the existing commands

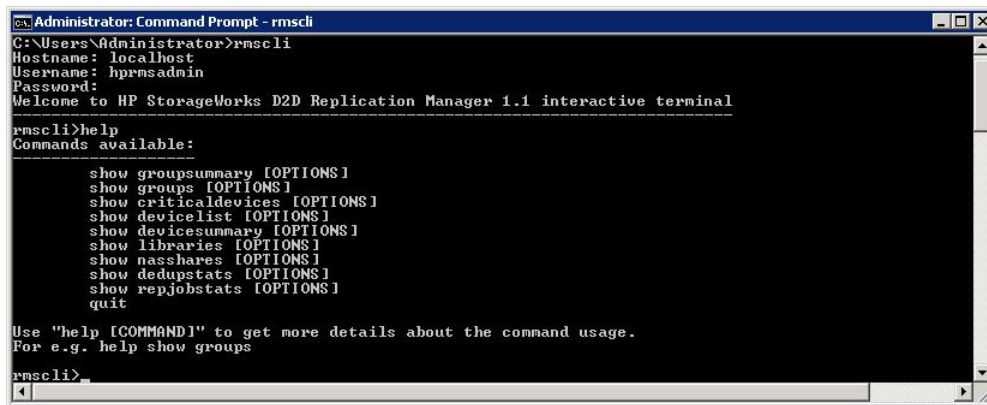
To list the existing command:

- At the command prompt, enter the following command:

help

The CLI client displays the existing command list. The following commands are available:

- show groupsummary
- show groups
- show devicelist
- show criticaldevices
- show devicesummary
- show libraries
- show nasshares
- show dedupstats
- show repjobstats
- quit



```

Administrator: Command Prompt - rmscli
C:\Users\Administrator>rmscli
Hostname: localhost
Username: hprmsadmin
Password:
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal

rmscli>help
-----
Commands available:

    show groupsummary [OPTIONS]
    show groups [OPTIONS]
    show criticaldevices [OPTIONS]
    show devicelist [OPTIONS]
    show devicesummary [OPTIONS]
    show libraries [OPTIONS]
    show nasshares [OPTIONS]
    show dedupstats [OPTIONS]
    show repjobstats [OPTIONS]
    quit

Use "help [COMMAND]" to get more details about the command usage.
For e.g. help show groups

rmscli>_

```

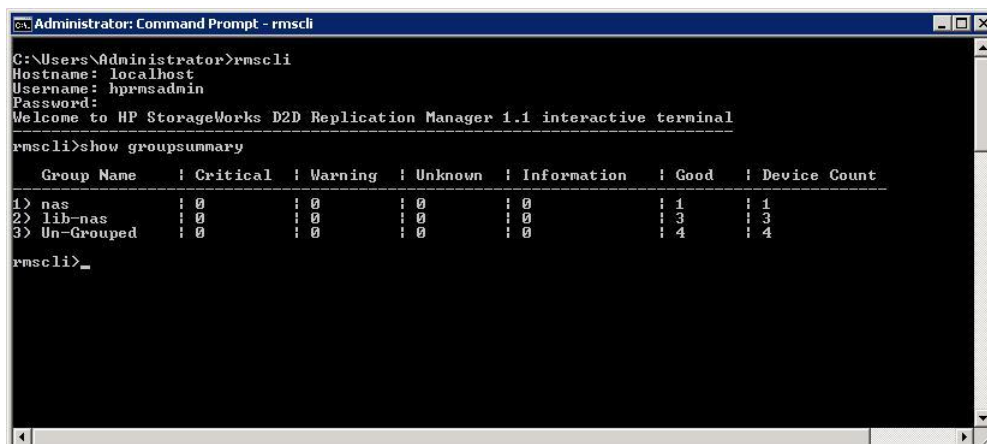
## Viewing the group summary

To view the group summary:

1. At the command prompt, enter the following command:

show groupsummary

The client displays the overall status summary for all the groups to which you have access.



```

Administrator: Command Prompt - rmscli
C:\Users\Administrator>rmscli
Hostname: localhost
Username: hprmsadmin
Password:
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal

rmscli>show groupsummary
-----
Group Name      | Critical | Warning | Unknown | Information | Good | Device Count
-----
1> nas          | 0        | 0        | 0        | 0            | 1    | 1
2> lib-nas      | 0        | 0        | 0        | 0            | 3    | 3
3> Un-Grouped   | 0        | 0        | 0        | 0            | 4    | 4

rmscli>_

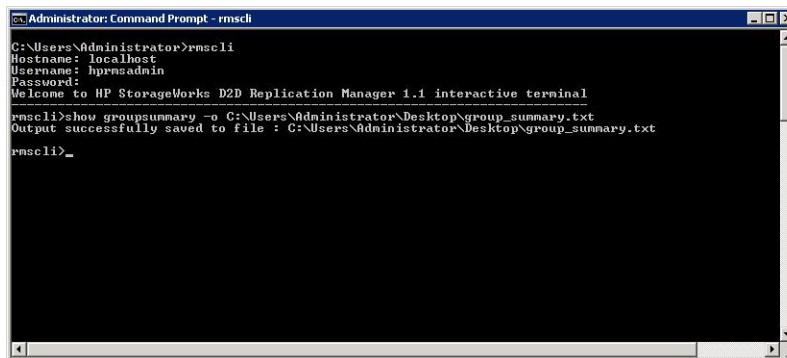
```

2. You can also redirect the output of this command to a file using the `-o` option. At the command prompt, enter the following command:

```
show groupsummary -o <output file>
```

For example:

```
show groupsummary -o c:\work\groupsummary.txt
```



```
Administrator: Command Prompt - rmscli
C:\Users\Administrator>rmscli
Hostname: localhost
Username: hprmsadmin
Password:
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal
rmscli>show groupsummary -o C:\Users\Administrator\Desktop\group_summary.txt
Output successfully saved to file : C:\Users\Administrator\Desktop\group_summary.txt
rmscli>_
```

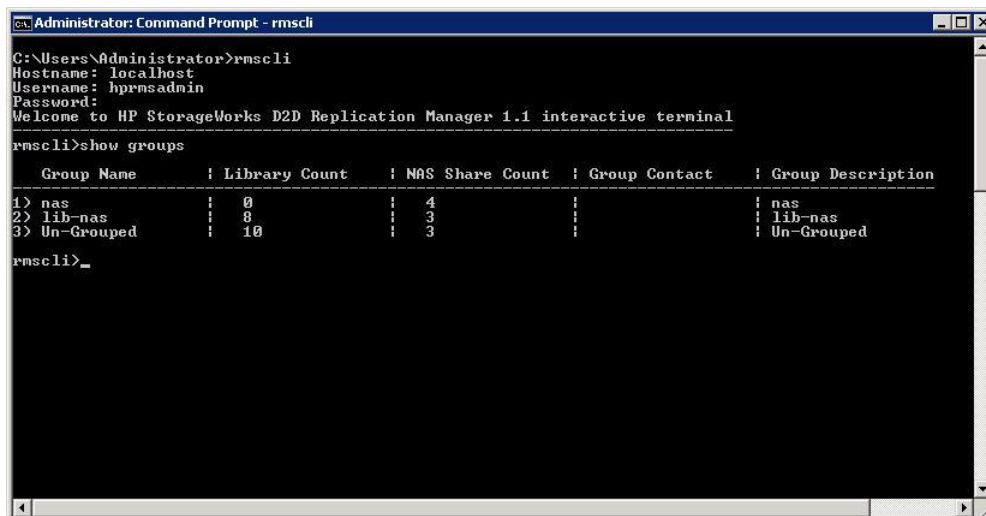
## Viewing the owned group details

To view details for the groups you own:

1. At the command prompt, enter the following command:

```
show groups
```

The client displays your group details.



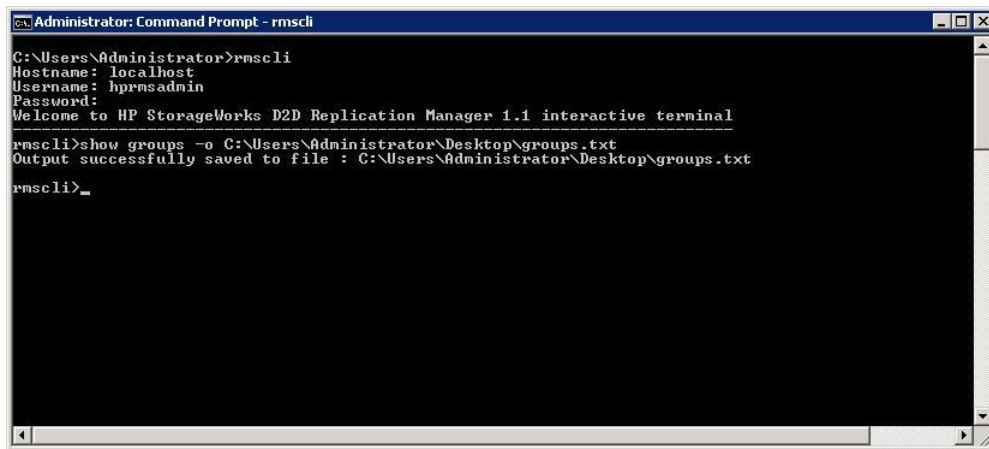
```
Administrator: Command Prompt - rmscli
C:\Users\Administrator>rmscli
Hostname: localhost
Username: hprmsadmin
Password:
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal
rmscli>show groups
Group Name      | Library Count | NAS Share Count | Group Contact | Group Description
1> nas          | 0             | 4               |               | nas
2> lib-nas      | 8             | 3               |               | lib-nas
3> Un-Grouped   | 10            | 3               |               | Un-Grouped
rmscli>_
```

2. You can also redirect the output of this command to a file using the `-o` option. At the command prompt, enter the following command:

```
show groups -o <output file>
```

For example:

```
show groups -o c:\work\groups.txt
```



```
Administrator: Command Prompt - rmscli
C:\Users\Administrator>rmscli
Hostname: localhost
Username: hprmsadmin
Password:
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal
rmscli>show groups -o C:\Users\Administrator\Desktop\groups.txt
Output successfully saved to file : C:\Users\Administrator\Desktop\groups.txt
rmscli>_
```

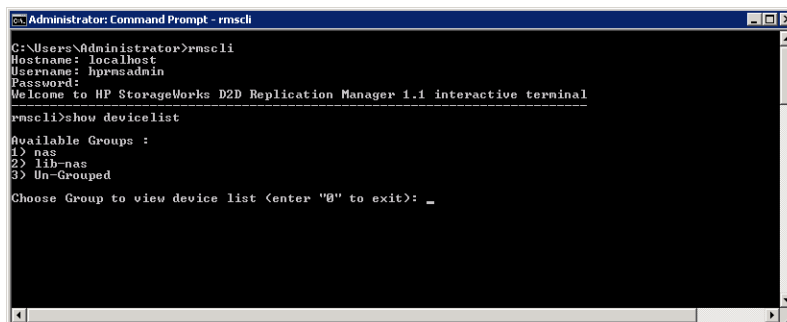
## Viewing the device details

To view the list of devices and other information for a particular group:

1. At the command prompt, enter the following command:

```
show devicelist
```

The client displays the groups that you own.



```
Administrator: Command Prompt - rmscli
C:\Users\Administrator>rmscli
Hostname: localhost
Username: hprmsadmin
Password:
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal
rmscli>show devicelist
Available Groups :
1> nas
2> lib-nas
3> Un-Grouped
Choose Group to view device list (enter "0" to exit): _
```

2. To view the device list, enter the appropriate group number or group name.  
The client displays the list of devices and information for the selected group.



```

Administrator: Command Prompt - rmscli

C:\Users\Administrator>rmscli
Hostname: localhost
Username: hprmsadmin
Password:
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal

rmscli>show devicelist

Available Groups :
1> nas
2> lib-nas
3> Un-Grouped

Choose Group to view device list (enter "0" to exit): lib-nas
Following is the list of appliances under selected group (lib-nas) :

1) Appliance Name : D2D-MXQ02901K9
   Appliance Serial Number      : MXQ02901K9
   Overall Status                : Good
   Overall Status Description    : There are no replication issues
   Appliance IP Address         : 15.146.230.117
   Appliance Network Name       : stsdd2d08.ind.hp.com
   Number of Libraries           : 3
   Number of NAS Shares         : 2

2) Appliance Name : stsdd2d10
   Appliance Serial Number      : 2UX9530324
   Overall Status                : Good
   Overall Status Description    : There are no replication issues
   Appliance IP Address         : 192.168.100.9
   Appliance Network Name       : 192.168.100.9
   Number of Libraries           : 0
   Number of NAS Shares         : 1

3) Appliance Name : D2D-2UX910084Y
   Appliance Serial Number      : 2UX910084Y
   Overall Status                : Good
   Overall Status Description    : There are no replication issues
   Appliance IP Address         : 192.168.100.11
   Appliance Network Name       : 192.168.100.11
   Number of Libraries           : 5
   Number of NAS Shares         : 0

rmscli>_

```

3. To provide the options details in one line, enter the following command:

show devicelist -g <group name>

For example:

show devicelist -g Un-Grouped

```

Administrator: Command Prompt - rmscli

Copyright (c) 2006 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>rmscli
Hostname: localhost
Username: hprmsadmin
Password:
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal

rmscli>show devicelist -g Un-Grouped
Following is the list of appliances under selected group (Un-Grouped) :

1) Appliance Name : D2D-MXQ02901ZJ
   Appliance Serial Number      : MXQ02901ZJ
   Overall Status                : Good
   Overall Status Description    : There are no replication issues
   Appliance IP Address         : 15.146.230.97
   Appliance Network Name       : stsdd2d06.ind.hp.com
   Number of Libraries           : 0
   Number of NAS Shares         : 1

2) Appliance Name : D2D-MXQ03101XT
   Appliance Serial Number      : MXQ03101XT
   Overall Status                : Good
   Overall Status Description    : There are no replication issues
   Appliance IP Address         : 15.146.230.108
   Appliance Network Name       : stsdd2d07.ind.hp.com
   Number of Libraries           : 0
   Number of NAS Shares         : 2

3) Appliance Name : stsdd2d10
   Appliance Serial Number      : 2UX9530324
   Overall Status                : Good
   Overall Status Description    : There are no replication issues
   Appliance IP Address         : 192.168.100.9
   Appliance Network Name       : 192.168.100.9
   Number of Libraries           : 8
   Number of NAS Shares         : 0

4) Appliance Name : D2D-2UX910084Y
   Appliance Serial Number      : 2UX910084Y
   Overall Status                : Good
   Overall Status Description    : There are no replication issues
   Appliance IP Address         : 192.168.100.11
   Appliance Network Name       : 192.168.100.11
   Number of Libraries           : 2
   Number of NAS Shares         : 0

rmscli>_

```

4. To redirect the output of this command to a file, use the `-o` option. Enter the following command:

```
show devicelist -g <group name> -o <output file>
```

For example:

```
show devicelist -g Un-Grouped -o c:\devicelist.txt
```

## Viewing the device summary

You can view the summary report for a specific device and group. The summary report provides an overview of any current issues with the device in that group.

To view a device summary report:

1. At the command prompt, enter the following command:

```
show devicesummary
```

The client displays the groups that you own.

2. Enter the appropriate group number or group name of the device.

The client displays the list of devices for the selected group.

3. Enter the appropriate device number or device serial number from the list.

The device summary report displays the following information for the device in the selected group:

- Current status of the device
- Status of any virtual libraries on the device
- Status of any NAS Shares on the device
- Amount of used and free space on the disk
- De-duplication ratio
- Amount of stored user data

```

Administrator: Command Prompt - rmscli
Username: hprmsadmin
Password:
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal

rmscli>show groupsummary
-----
Group Name      | Critical | Warning | Unknown | Information | Good | Device Count
-----
1) nas          | 0        | 0        | 0        | 0            | 1    | 1
2) lib-nas      | 0        | 0        | 0        | 0            | 3    | 3
3) Un-Grouped   | 0        | 0        | 0        | 0            | 4    | 4

rmscli>show devicesummary
Available Groups :
1) nas
2) lib-nas
3) Un-Grouped

Choose Group to view device list (enter "0" to exit): nas

List of devices under selected group (nas) :
1) MXQ02901ZJ (D2D-MXQ02901ZJ)

Choose device to view its summary (enter "0" to exit): 1

Following is the device summary information for appliance : MXQ02901ZJ

Appliance Status
-----
Appliance name           : D2D-MXQ02901ZJ
Appliance serial number  : MXQ02901ZJ
Appliance health status  : Good
Appliance health status description : Running
Appliance total capacity : 2746.0 GB
Appliance free space     : 2730.0 GB
Appliance used space     : 16.0 GB
Appliance user data stored : 15.0 GB
Appliance de-duplication ratio : 0.94:1

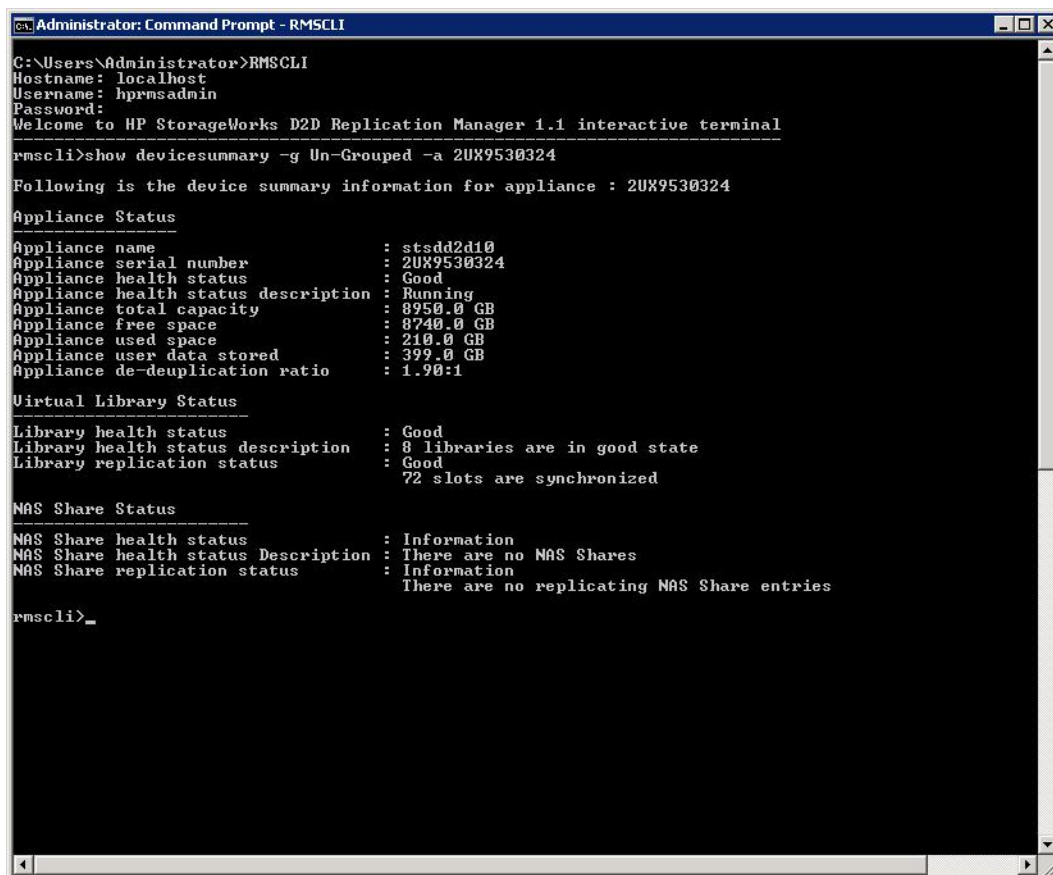
Virtual Library Status
-----
Library health status    : Information
Library health status description : There are no libraries
Library replication status : Information
                          : There are no replicating slots

NAS Share Status
-----
NAS Share health status  : Good
NAS Share health status Description : 4 NAS Shares are in good state
NAS Share replication status : Good
                          : 1586 entries are synchronized

rmscli>

```

4. To provide the options details in one line, enter the following command:  
`show devicesummary -g <group name> -a <device serial number>`  
For example:  
`show devicesummary -g Un-Grouped -a 2UX91202NS1`



```
Administrator: Command Prompt - RMSCLI
C:\Users\Administrator>RMSCLI
Hostname: localhost
Username: hprmsadmin
Password:
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal
rmscli>show devicesummary -g Un-Grouped -a 2UX9530324

Following is the device summary information for appliance : 2UX9530324

Appliance Status
-----
Appliance name           : stsdd2d10
Appliance serial number  : 2UX9530324
Appliance health status  : Good
Appliance health status description : Running
Appliance total capacity : 8950.0 GB
Appliance free space     : 8740.0 GB
Appliance used space     : 210.0 GB
Appliance user data stored : 399.0 GB
Appliance de-duplication ratio : 1.90:1

Virtual Library Status
-----
Library health status    : Good
Library health status description : 8 libraries are in good state
Library replication status : Good
                          72 slots are synchronized

NAS Share Status
-----
NAS Share health status  : Information
NAS Share health status Description : There are no NAS Shares
NAS Share replication status : Information
                          There are no replicating NAS Share entries

rmscli>_
```

5. To redirect the output of this command to a file, use the `-o` option. Enter the following command:

```
show devicesummary -g <group name> -a <device serial number> -o
c:\devicesummary.txt
```

For example:

```
show devicesummary -g Un-Grouped -a 2UX91202NS1 -o
c:\devicesummary.txt
```

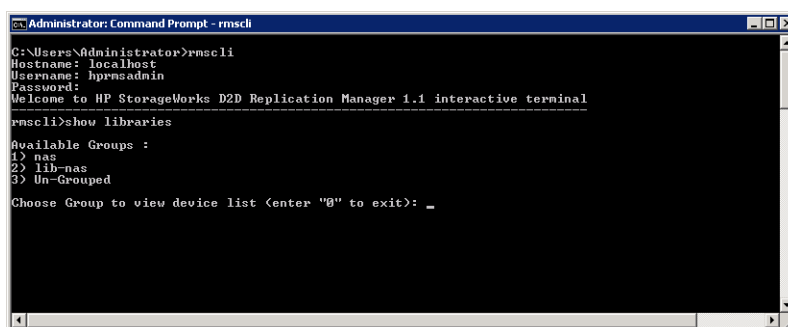
## Viewing the libraries

To view the libraries and their status details:

1. At the command prompt, enter the following command:

```
show libraries
```

The client displays the groups that you own.



```
Administrator: Command Prompt - rmscli
C:\Users\Administrator>rmscli
Hostname: localhost
Username: hprmsadmin
Password:
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal
rmscli>show libraries

Available Groups :
1> nas
2> lib-nas
3> Un-Grouped

Choose Group to view device list (enter "0" to exit): _
```

2. Enter the appropriate group number or group name of the device.  
The client displays the list of devices for the selected group.

```
Administrator: rmscli
Microsoft Windows [Version 6.0.6002]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>rmscli
Hostname: localhost
Username: hprmsadmin
Password:
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal

rmscli>show libraries

Available Groups :
1) nas
2) lib-nas
3) Un-Grouped

Choose Group to view device list (enter "0" to exit): 2

List of devices under selected group (lib-nas) :
1) 2UX910084Y (D2D-2UX910084Y)
2) MKQ02901K9 (D2D-MKQ02901K9)
3) 2UX9530324 (std2dd2d10)

Choose device to view its library list (enter "0" to exit): _
```

3. Enter the appropriate device number or device serial number to view its library list and status details.

```
Administrator: rmscli

1) nas
2) lib-nas
3) Un-Grouped

Choose Group to view device list (enter "0" to exit): 2

List of devices under selected group (lib-nas) :
1) 2UX910084Y (D2D-2UX910084Y)
2) MKQ02901K9 (D2D-MKQ02901K9)
3) 2UX9530324 (std2dd2d10)

Choose device to view its library list (enter "0" to exit): 1

Following is the list of virtual libraries for selected appliance : 2UX910084Y

1) Library name : TEST_RM_SRC1
   Library status : Good
   Library replication status : Good
   Library status details : There are no replication issues
   Library replication type : Replication Source

   Associated Library/Appliance
   -----
   Target Appliance : 2UX9530324 (std2dd2d10)
   Target Library name : TEST_RM_IGT1
   Target Library status : Good
   Target Library replication status : Good
   Target Library status details : There are no replication issues

2) Library name : TEST_RM_SRC2
   Library status : Good
   Library replication status : Good
   Library status details : There are no replication issues
   Library replication type : Replication Source

   Associated Library/Appliance
   -----
   Target Appliance : 2UX9530324 (std2dd2d10)
   Target Library name : TEST_RM_IGT1
   Target Library status : Good
   Target Library replication status : Good
   Target Library status details : There are no replication issues

3) Library name : S_RMS_IGT
   Library status : Good
   Library replication status : Good
   Library status details : There are no replication issues
   Library replication type : Replication Target

   Associated Library/Appliance
   -----
   Source Appliance : 2UX9530324 (std2dd2d10)
   Source Library name : S_RMS_SRC
   Source Library status : Good
   Source Library replication status : Good
   Source Library status details : There are no replication issues

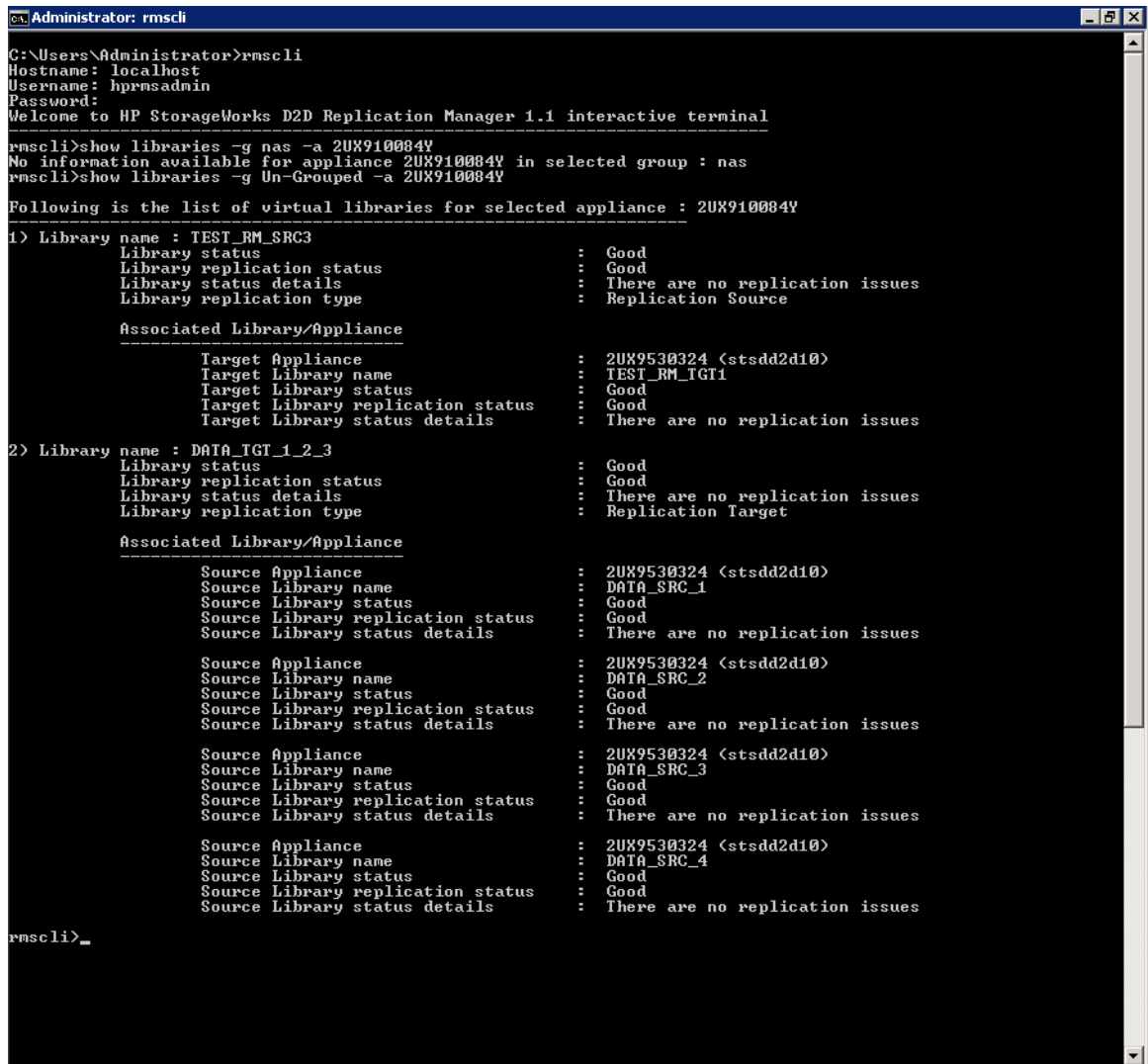
4) Library name : Library 3
   Library status : Good
   Library replication status : Not Replicating
   Library status details : Not a replication source or target
   Library replication type : Non-Replicating

5) Library name : RMS_Test_IGT1
   Library status : Good
   Library replication status : Not Replicating
   Library status details : Not a replication source or target
   Library replication type : Non-Replicating
```

4. To provide the options details in one line, enter the following command:  
show libraries -g <group name> -a <device serial number>

For example:

```
show libraries -g Un-Grouped -a 2UX91202NS1
```



```
Administrator: rmscli
C:\Users\Administrator>rmscli
Hostname: localhost
Username: hprmsadmin
Password:
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal

rmscli>show libraries -g nas -a 2UX910084Y
No information available for appliance 2UX910084Y in selected group : nas
rmscli>show libraries -g Un-Grouped -a 2UX910084Y

Following is the list of virtual libraries for selected appliance : 2UX910084Y

1) Library name : TEST_RM_SRC3
   Library status : Good
   Library replication status : Good
   Library status details : There are no replication issues
   Library replication type : Replication Source

   Associated Library/Appliance
   -----
   Target Appliance : 2UX9530324 <stsdd2d10>
   Target Library name : TEST_RM_IGT1
   Target Library status : Good
   Target Library replication status : Good
   Target Library status details : There are no replication issues

2) Library name : DATA_IGT_1_2_3
   Library status : Good
   Library replication status : Good
   Library status details : There are no replication issues
   Library replication type : Replication Target

   Associated Library/Appliance
   -----
   Source Appliance : 2UX9530324 <stsdd2d10>
   Source Library name : DATA_SRC_1
   Source Library status : Good
   Source Library replication status : Good
   Source Library status details : There are no replication issues

   Source Appliance : 2UX9530324 <stsdd2d10>
   Source Library name : DATA_SRC_2
   Source Library status : Good
   Source Library replication status : Good
   Source Library status details : There are no replication issues

   Source Appliance : 2UX9530324 <stsdd2d10>
   Source Library name : DATA_SRC_3
   Source Library status : Good
   Source Library replication status : Good
   Source Library status details : There are no replication issues

   Source Appliance : 2UX9530324 <stsdd2d10>
   Source Library name : DATA_SRC_4
   Source Library status : Good
   Source Library replication status : Good
   Source Library status details : There are no replication issues

rmscli>
```

5. To redirect the output of this command to a file, use the `-o` option. Enter the following command:  
`show libraries -g <group name> -a <device serial number> -o <output file>`

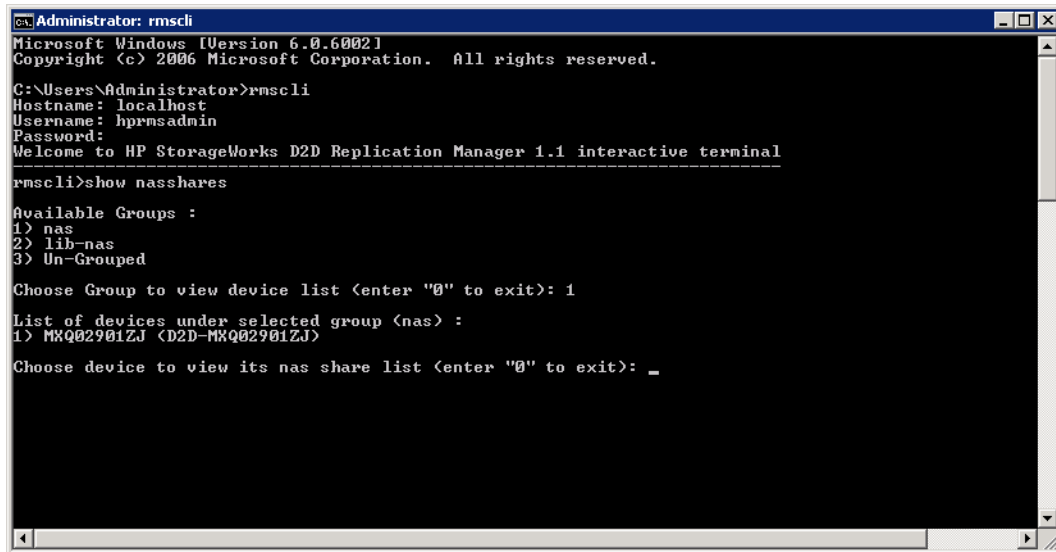
For example:

```
show libraries -g Un-Grouped -a 2UX91202NS1 -o c:\libraries.txt
```

## Viewing the NAS shares

To view the NAS shares and their status details:

1. At the command prompt, enter the following command:  
`show nasshared`  
The client displays the groups that you own.
2. Enter the appropriate group number or group name of the device.  
The client displays the list of devices for the selected group.
3. Enter the appropriate device number or device serial number to view its NAS Shares and their status details.



```
Administrator: rmscli
Microsoft Windows [Version 6.0.6002]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>rmscli
Hostname: localhost
Username: hprmsadmin
Password:
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal

rmscli>show nasshares

Available Groups :
1> nas
2> lib-nas
3> Un-Grouped

Choose Group to view device list (enter "0" to exit): 1

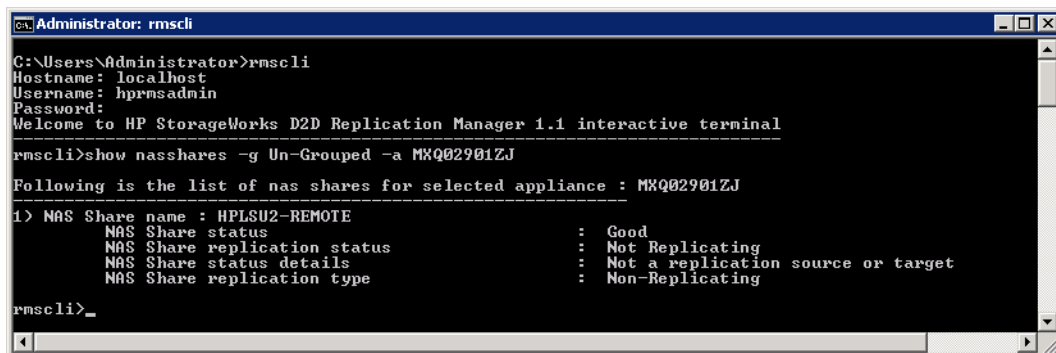
List of devices under selected group (nas) :
1> MXQ02901ZJ (D2D-MXQ02901ZJ)

Choose device to view its nas share list (enter "0" to exit): _
```

4. To provide the options details in one line, enter the following command:  
show nasshares -g <group name> -a <device serial number>

For example:

```
show nasshares -g Un-Grouped -a 2UX91202NS1
```



```
Administrator: rmscli

C:\Users\Administrator>rmscli
Hostname: localhost
Username: hprmsadmin
Password:
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal

rmscli>show nasshares -g Un-Grouped -a MXQ02901ZJ

Following is the list of nas shares for selected appliance : MXQ02901ZJ
-----
1> NAS Share name : HPLSU2-REMOTE
    NAS Share status      : Good
    NAS Share replication status : Not Replicating
    NAS Share status details : Not a replication source or target
    NAS Share replication type : Non-Replicating

rmscli>_
```

5. To redirect the output of this command to a file, use the -o option. Enter the following command:  
show nasshares -g <group name> -a <device serial number> -o <output file>

For example:

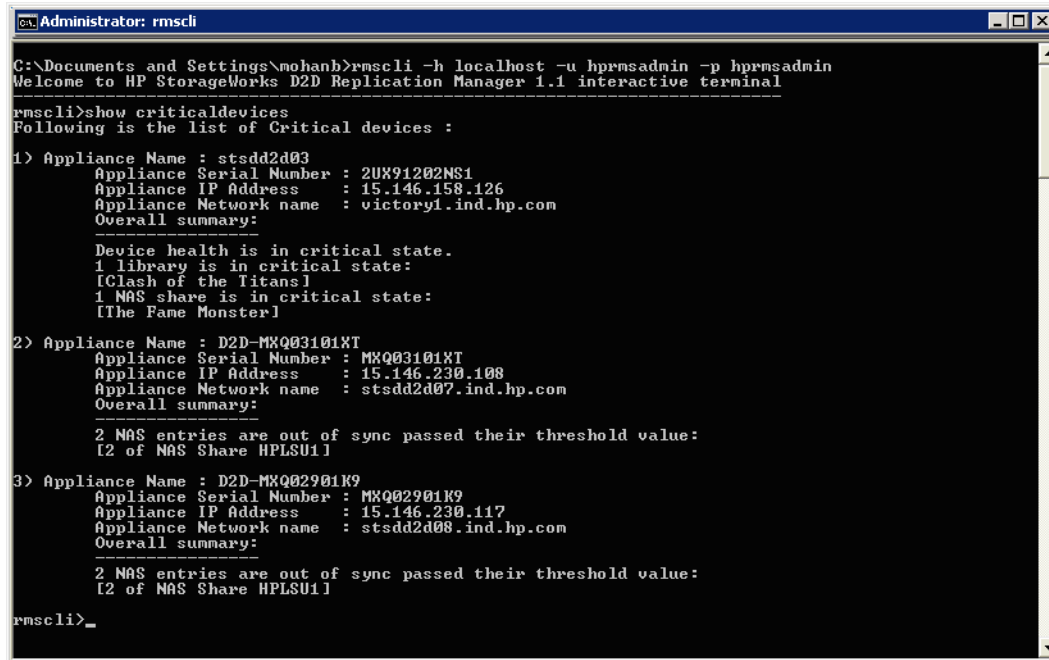
```
show nasshares -g Un-Grouped -a 2UX91202NS1 -o c:\nasshares.txt
```

## Viewing a list of critical devices

To view a list of critical devices, using a single command:

1. At the command prompt, enter the following command:

`show criticaldevices`



```
Administrator: rmscli
C:\Documents and Settings\mohanb>rmscli -h localhost -u hrrmsadmin -p hrrmsadmin
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal

rmscli>show criticaldevices
Following is the list of Critical devices :

1> Appliance Name : stsdd2d03
   Appliance Serial Number : 2UX91202NS1
   Appliance IP Address : 15.146.158.126
   Appliance Network name : victory1.ind.hp.com
   Overall summary:
   -----
   Device health is in critical state.
   1 library is in critical state:
   [Clash of the Titans]
   1 NAS share is in critical state:
   [The Fame Monster]

2> Appliance Name : D2D-MXQ03101XT
   Appliance Serial Number : MXQ03101XT
   Appliance IP Address : 15.146.230.108
   Appliance Network name : stsdd2d07.ind.hp.com
   Overall summary:
   -----
   2 NAS entries are out of sync passed their threshold value:
   [2 of NAS Share HPLSU1]

3> Appliance Name : D2D-MXQ02901K9
   Appliance Serial Number : MXQ02901K9
   Appliance IP Address : 15.146.230.117
   Appliance Network name : stsdd2d08.ind.hp.com
   Overall summary:
   -----
   2 NAS entries are out of sync passed their threshold value:
   [2 of NAS Share HPLSU1]

rmscli>_
```

2. To redirect the output of this command to a file, use the `-o` option. Enter the following command:

`show criticaldevices -o <output file>`

For example:

`show criticaldevices -o c:\criticaldevices.txt`

## Viewing the de-duplication and disk usage statistics

To view the de-duplication and disk usage statistics:

1. At the command prompt, enter the following command:

`show dedupstats`

The client displays the managed device list.

2. Enter the device number or device serial number from the list.

The client displays the option to choose the time period for the statistics.

3. Enter the time period from the list of available periods.

The client displays the de-duplication and disk usage statistics for that time period.



```

Administrator: rmscli
Username: hprmsadmin
Password:
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal

rmscli>show dedupstats

List of all managed devices :
1) MXQ02901ZJ <D2D-MXQ02901ZJ>
2) MXQ02901K9 <D2D-MXQ02901K9>
3) 2UX9530324 <std2d10>
4) 2UX910084Y <D2D-2UX910084Y>
5) MXQ03101XT <D2D-MXQ03101XT>

Choose device to view its statistics <enter "0" to exit>: 1

Time periods available for statistics :
1) LAST_24_HOURS
2) LAST_7_DAYS
3) LAST_4_WEEKS
4) LAST_8_WEEKS
5) LAST_3_MONTHS
6) EVERYTHING

Choose the duration for statistics <enter "0" to exit>: 1

Following is the available de-duplication statistics information for appliance : MXQ02901ZJ
Duration : Last 24 hours

Date and Time      : Disk Used <GB>      : User Data Stored <GB>      : De-Duplication Ratio
-----
Dec 08 2010 12:40   : Not Available       : Not Available              : Unknown
Dec 08 2010 13:40   : Not Available       : Not Available              : Unknown
Dec 08 2010 14:40   : Not Available       : Not Available              : Unknown
Dec 08 2010 15:40   : Not Available       : Not Available              : Unknown
Dec 08 2010 16:40   : Not Available       : Not Available              : Unknown
Dec 08 2010 17:40   : Not Available       : Not Available              : Unknown
Dec 08 2010 18:40   : Not Available       : Not Available              : Unknown
Dec 08 2010 19:40   : Not Available       : Not Available              : Unknown
Dec 08 2010 20:40   : Not Available       : Not Available              : Unknown
Dec 08 2010 21:40   : Not Available       : Not Available              : Unknown
Dec 08 2010 22:40   : Not Available       : Not Available              : Unknown
Dec 08 2010 23:40   : Not Available       : Not Available              : Unknown
Dec 09 2010 24:40   : Not Available       : Not Available              : Unknown
Dec 09 2010 01:40   : Not Available       : Not Available              : Unknown
Dec 09 2010 02:40   : Not Available       : Not Available              : Unknown
Dec 09 2010 03:40   : Not Available       : Not Available              : Unknown
Dec 09 2010 04:40   : Not Available       : Not Available              : Unknown
Dec 09 2010 05:40   : Not Available       : Not Available              : Unknown
Dec 09 2010 06:40   : Not Available       : Not Available              : Unknown
Dec 09 2010 07:59   : 14.0                : 13.0                       : 0.93:1
Dec 09 2010 08:59   : 15.0                : 14.0                       : 0.93:1
Dec 09 2010 09:59   : 16.0                : 15.0                       : 0.94:1
Dec 09 2010 10:59   : 17.0                : 16.0                       : 0.94:1
Dec 09 2010 11:59   : 19.0                : 17.0                       : 0.89:1
Dec 09 2010 12:29   : 19.0                : 18.0                       : 0.95:1

```

- To provide the options details in one line, enter the following command:

```
show dedupstats -a <device serial number>
```

For example:

```
show dedupstats -a 2UX91202NS1
```

- The default time period is Everything. If you want to change the time period, use the -t option. Enter the following command:

```
show dedupstats -a <device serial number> -t <time period>
```

For example:

```
show dedupstats -a 2UX91202NS1 -t last_24_hours
```

```

Administrator: rmscli

C:\Users\Administrator>rmscli
Hostname: localhost
Username: hprmsadmin
Password:
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal

rmscli>show dedupstats -a MXQ02901ZJ -t LAST_7_DAYS

Following is the available de-duplication statistics information for appliance : MXQ02901ZJ
Duration : Last 7 days

Date and Time      : Disk Used <GB>      : User Data Stored <GB>      : De-Duplication Ratio
-----
Dec 02 2010 12:46   : Not Available       : Not Available              : Unknown
Dec 03 2010 12:46   : Not Available       : Not Available              : Unknown
Dec 04 2010 12:46   : Not Available       : Not Available              : Unknown
Dec 05 2010 12:46   : Not Available       : Not Available              : Unknown
Dec 06 2010 12:46   : Not Available       : Not Available              : Unknown
Dec 07 2010 12:46   : Not Available       : Not Available              : Unknown
Dec 08 2010 12:46   : Not Available       : Not Available              : Unknown
Dec 09 2010 12:44   : 19.0                : 18.0                       : 0.95:1

rmscli>_

```

6. To redirect the output of this command to a comma-separated values (CSV) file, use the `-o` option. Enter the following command:

```
show dedupstats -a <device serial number> -o <output file>
```

For example:

```
show dedupstats -a 2UX91202NS1 -o c:\dedupstats.csv
```

## Viewing the replication job statistics

To view the replication job statistics:

1. At the command prompt, enter the following command:

```
show showrepjobstats
```

The client displays the groups that you own.

2. Enter a group number or a group name.

The client displays the list of devices for the selected group.

3. Enter the device number or device serial number from the list.

The client displays the component types for the device.

4. Enter the component type from the list.

If the selected component is either LIBRARY or NASSHARE, enter a library or a NAS share that you manage.

The client displays the time periods for the statistics.

5. Enter the time period from the list.

The client displays the replication job statistics for the selected component.

```

Administrator: rmscli
rmscli>show repjobstats

Available Groups :
1> nas
2> lib-nas
3> Un-Grouped

Choose Group to view device list (enter "0" to exit): 1

List of all managed devices :
1> MXQ02901ZJ (D2D-MXQ02901ZJ)

Choose device to view its statistics (enter "0" to exit): 1

List of component types:
1> LIBRARY
2> MASSHARE
3> ALL

Choose component type for statistics (enter "0" to exit) : 2

Available nas shares :
1> HPLSU1
2> HPLSU1-REMOTE
3> HPLSU2
4> Share1

Choose component to view the replication job statistics (enter "0" to exit): 1

Time periods available for statistics :
1> LAST_24_HOURS
2> LAST_7_DAYS
3> LAST_4_WEEKS
4> LAST_8_WEEKS
5> LAST_3_MONTHS
6> EVERYTHING

Choose the duration for statistics (enter "0" to exit): 1

Following is the available replication job statistics of selected component : HPLSU1
Duration : Last 24 hours

Date and Time      | Number of critical jobs | Number of warning jobs
-----
Dec 08 2010 12:50  | Not Available           | Not Available
Dec 08 2010 13:50  | Not Available           | Not Available
Dec 08 2010 14:50  | Not Available           | Not Available
Dec 08 2010 15:50  | Not Available           | Not Available
Dec 08 2010 16:50  | Not Available           | Not Available
Dec 08 2010 17:50  | Not Available           | Not Available
Dec 08 2010 18:50  | Not Available           | Not Available
Dec 08 2010 19:50  | Not Available           | Not Available
Dec 08 2010 20:50  | Not Available           | Not Available
Dec 08 2010 21:50  | Not Available           | Not Available
Dec 08 2010 22:50  | Not Available           | Not Available
Dec 08 2010 23:50  | Not Available           | Not Available
Dec 09 2010 00:50  | Not Available           | Not Available
Dec 09 2010 01:50  | Not Available           | Not Available
Dec 09 2010 02:50  | Not Available           | Not Available
Dec 09 2010 03:50  | Not Available           | Not Available
Dec 09 2010 04:50  | Not Available           | Not Available
Dec 09 2010 05:50  | Not Available           | Not Available
Dec 09 2010 06:50  | Not Available           | Not Available
Dec 09 2010 07:50  | 0                       | 0
Dec 09 2010 08:50  | 0                       | 0

```

6. To provide the options details in one line, enter the following command:  
`show repjobstats -g <group name> -a <device serial number> -l <library name>`  
For example:  
`show repjobstats -g Un-Grouped -a CR2061E862 -l "Library 2"`
7. The default time period is Everything. If you want to change the time period, use the `-t` option. Enter the following command:  
`show repjobstats -g <group name> -a <device serial number> -l <library name> -t <time period>`  
For example:  
`show repjobstats -g Un-Grouped -a CR2061E862 -l "Library 2" -t last_24_hours`

```

Administrator: rmscli
C:\Users\Administrator>rmscli
Hostname: localhost
Username: hprmsadmin
Password:
Welcome to HP StorageWorks D2D Replication Manager 1.1 interactive terminal

rmscli>show repjobstats -g Un-Grouped -a 2UX9530324 -l "DATA_SRC_1" -t LAST_4_WEEKS

Following is the available replication job statistics of selected component : DATA_SRC_1
Duration : Last 4 weeks

Date and Time      | Number of critical jobs | Number of warning jobs
-----
Nov 11 2010 12:58 | Not Available           | Not Available
Nov 12 2010 12:58 | Not Available           | Not Available
Nov 13 2010 12:58 | Not Available           | Not Available
Nov 14 2010 12:58 | Not Available           | Not Available
Nov 15 2010 12:58 | Not Available           | Not Available
Nov 16 2010 12:58 | Not Available           | Not Available
Nov 17 2010 12:58 | Not Available           | Not Available
Nov 18 2010 12:58 | Not Available           | Not Available
Nov 19 2010 12:58 | Not Available           | Not Available
Nov 20 2010 12:58 | Not Available           | Not Available
Nov 21 2010 12:58 | Not Available           | Not Available
Nov 22 2010 12:58 | Not Available           | Not Available
Nov 23 2010 12:58 | Not Available           | Not Available
Nov 24 2010 12:58 | Not Available           | Not Available
Nov 25 2010 12:58 | Not Available           | Not Available
Nov 26 2010 12:58 | Not Available           | Not Available
Nov 27 2010 12:58 | Not Available           | Not Available
Nov 28 2010 12:58 | Not Available           | Not Available
Nov 29 2010 12:58 | Not Available           | Not Available
Nov 30 2010 12:58 | Not Available           | Not Available
Dec 01 2010 12:58 | Not Available           | Not Available
Dec 02 2010 12:58 | Not Available           | Not Available
Dec 03 2010 12:58 | Not Available           | Not Available
Dec 04 2010 12:58 | Not Available           | Not Available
Dec 05 2010 12:58 | Not Available           | Not Available
Dec 06 2010 12:58 | Not Available           | Not Available
Dec 07 2010 12:58 | Not Available           | Not Available
Dec 08 2010 12:58 | Not Available           | Not Available
Dec 09 2010 12:44 | 0                       | 0

rmscli>

```

- To redirect the output of this command to a CSV file, use the `-o` option. Enter the following command, as shown in this example:

```
show repjobstats -g <group name> -a <device serial number> -l
<library name> -t <time period> -o <output file>
```

For example:

```
show repjobstats -g Un-Grouped -a CR2061E862 -l "Library 2" -t
everything -o c:\repjobstats.csv
```

## Exiting the Command Line Interface

To exit from the Command Line Interface:

- At the command prompt, enter the following command:  
quit
- Press the Enter key.

## Using the Command Line Interface as a batch file

You can use the Command Line Interface client as a batch command for generating reports in the background. The CLI batch commands can be used by other utilities for automatically-generated reports.

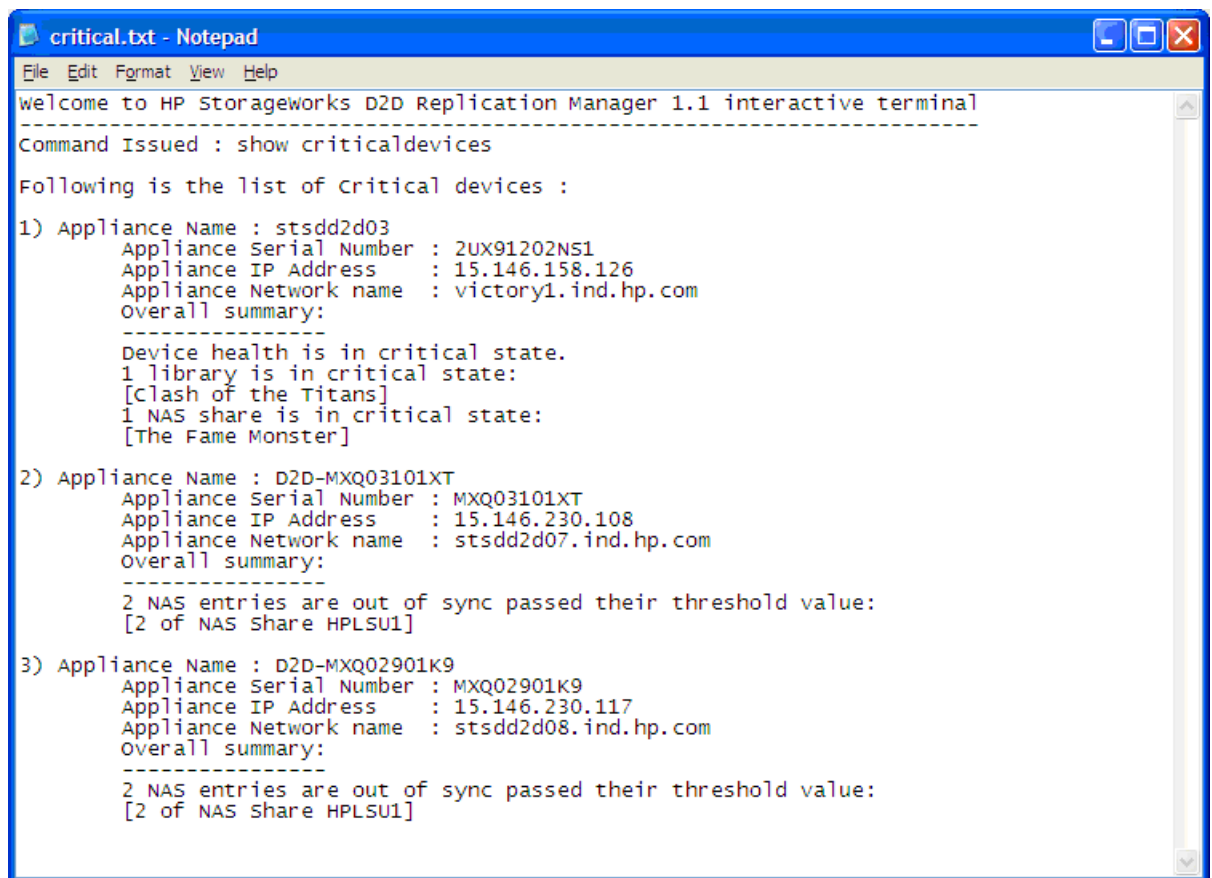
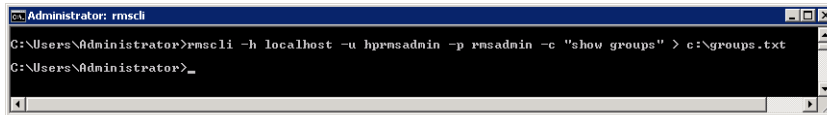
To view the list of batch commands and their usage:

1. At the command prompt, enter the following command:

```
rmscli -help
```

2. In order to use these batch commands and redirect the output to a file, use the batch command in following format:

```
rmscli -h [HOSTNAME] -u [USERID] -p [PASSWORD] -c "[BATCH CMD]" > [FILE]
```



# A Troubleshooting

The Replication Manager provides error messages for all errors. The user can continue with other operations as normal, unless the error prohibits the normal operations of the software.

In the case of critical errors such as a database connection failure or an inability to contact the server, an error page appears and provides a description of the error and the option to save the error log on the client system. The user is able to login to the application after the issue is solved.



To save the error log, click the **Save Error Log** button.

**NOTE:** All errors are saved to the log file on the server. The log file is located at log\RMS\_ServiceLog.log. Contact HP Support for help.

**Table 1 Common issues**

Symptom	Possible Cause	Solution
Unable to login	<ul style="list-style-type: none"><li>• The user already logged in and is trying to login from a second browser window.</li><li>• The user has closed the browser window abruptly while accessing the application and is trying to login from a new browser.</li><li>• The user clicked on the browser refresh button.</li></ul>	Click the <b>Force Login</b> box on the login page. This will terminate the previous session.
Unable to login, flash player exception, and application does not respond	The host name is being resolved to an IPv6 address instead of an IPv4 address.	<ul style="list-style-type: none"><li>• Use the IPv4 address of the host to access Replication Manager.</li><li>• Resolve the host name to an IPv4 address instead of an IPv6 address.</li></ul>
Server not available—Replication Manager cannot connect to a server that has already been added to the system.	The server status is not Good or the server is disconnected.	<ol style="list-style-type: none"><li>1. Check the status of the server.</li><li>2. If the server status is Good, check the connection to the server.</li></ol>
Device addition failure	<ul style="list-style-type: none"><li>• Invalid IP Address.</li><li>• The specified IP address is not reachable, either due to network problems or because the D2D device is not running.</li><li>• The specified IP address is not for a D2D device.</li><li>• Could not add some of the devices.</li></ul>	<ul style="list-style-type: none"><li>• Add the device with valid IP address.</li><li>• Check the network connectivity and ensure the device is running.</li><li>• Add a valid D2D device.</li><li>• Check the history log to find which device failed to add, ensure device connectivity, then add the device again.</li></ul>

**Table 1 Common issues** *(continued)*

Symptom	Possible Cause	Solution
Device status is Unknown for long durations.	Network issue or the D2D device is not running.	<ul style="list-style-type: none"> <li>Check network connectivity to ensure the device is running.</li> <li>Ensure that device status is not Unknown.</li> </ul>
	The device IP Address is changed (by logging into the D2D application), but the device is already added with previous IP Address into Replication Manager.	Update the device IP Address in Replication Manager from the <b>Update Device</b> feature in the Navigation tree under Device.
	D2D is DHCP enabled, and gets a new IP address during reboots.	Replication Manager supports DHCP-enabled D2D devices only if the devices are under DNS. If a D2D device is in DHCP but not in DNS, whenever there is a new IP address assigned by DHCP, remove this device from Replication Manager and add it again.
Unable to connect to the Replication Manager.	<ul style="list-style-type: none"> <li>The client system is not able to communicate with the Replication Manager.</li> <li>Replication Manager is not running.</li> <li>The firewall is enabled on the system on which the Replication Manager is installed.</li> </ul>	<ul style="list-style-type: none"> <li>Ensure network connectivity on the client machine.</li> <li>Ensure Replication Manager is running on the server system.</li> <li>Enable TCP port 3095 (or the port on which the application is configured to run) on the firewall.</li> </ul>
Installation fails due to an existing PostgreSQL database installation.	HP StorageWorks tries to install PostgreSQL database and fails because of the existing installation.	Either remove the existing PostgreSQL database installation or install Replication Manager on a different system where PostgreSQL database is not yet installed.
Installation fails with the error - Setup could not provide access privileges to <InstallDir>\RMS DataStore\Postgres\data directory of PostgreSQL.	The installer is not able to run the DOS command CACLS, to give write permission to the Postgres data folder to the User account on the local system.	Verify that the PATH environment variable is set properly and contains windows system directories.
Installation fails with the error - Error reading setup initialization file.	The installation file is corrupt.	Validate the checksum of the downloaded install package to verify that the file is not corrupt. If it is corrupt, download the package again.
Fatal error upon logging in	There is a system issue.	<ol style="list-style-type: none"> <li>Click <b>Save Error Log</b>. The <b>Select location for download by [filename]</b> screen appears.</li> <li>Navigate to the location to save the error log, and ensure that it is named appropriately, then click <b>Save</b>.</li> <li>Users should contact the system administrator. Administrators should contact HP Technical Support. See <a href="#">HP technical support</a>.</li> </ol>

**Table 1 Common issues** *(continued)*

Symptom	Possible Cause	Solution
Fatal Error.	Replication Manager is not able to connect to the database.	<ul style="list-style-type: none"> <li>• Ensure that Replication Manager is running on the server.</li> <li>• If the Replication Manager will not start-up: <ol style="list-style-type: none"> <li>1. Completely uninstall Replication Manager.</li> <li>2. Perform a new installation of Replication Manager.</li> <li>3. Use the Restore utility (see <a href="#">Restoring the D2D Replication Manager database</a>) and choose the most recent backup.</li> </ol> </li> </ul>
Replication Manager service is not starting.	Port number 3095 is already used by another application.	<ol style="list-style-type: none"> <li>1. Edit the server.xml file in the \tomcat\conf folder and change the port number 3095 to some other free port number value, in the line <code>Connector port="3095" protocol="HTTP/1.1" connectionTimeout="20000"/</code>.</li> <li>2. Restart Replication Manager from the windows services list.</li> </ol>
Replication Manager crashed.		<p>Continue to backup the database, using backup utility on the Program Menu at regular intervals, so that these can be used for restoring in case of any Replication Manager crash.</p> <ol style="list-style-type: none"> <li>1. Completely uninstall Replication Manager.</li> <li>2. Perform a new installation of Replication Manager.</li> <li>3. Use the Restore utility (see <a href="#">Restoring the D2D Replication Manager database</a>) and choose the most recent backup.</li> </ol>



---

## B Support and Other Resources

This guide provides information about:

- Installing HP StorageWorks D2D Replication Manager
- Using HP StorageWorks D2D Replication Manager, with administrator-level permissions
- Using HP StorageWorks D2D Replication Manager, with user-level permissions

### Related documentation

The following documents [and websites] provide related information:

- *HP StorageWorks D2D Replication Manager Installation Guide*

You can find these documents from the Manuals page of the HP Business Support Center website:

<http://www.hp.com/support/manuals>

In the Storage section, click **Disk Storage Systems**, then **Disk-to-Disk Backup**, and then select your product.

### HP technical support

For worldwide technical support information, see the HP support website:

<http://www.hp.com/support>

Before contacting HP, collect the following information:

- Product model names and numbers
- Technical support registration number (if applicable)
- Product serial numbers
- Error messages
- Operating system type and revision level
- Detailed questions

### Subscription service

HP recommends that you register your product at the Subscriber's Choice for Business website:

<http://www.hp.com/go/e-updates>

After registering, you will receive e-mail notification of product enhancements, new driver versions, firmware updates, and other product resources.

## HP websites

For additional information, see the following HP websites:

- <http://www.hp.com>
- <http://www.hp.com/go/storage>
- [http://www.hp.com/service\\_locator](http://www.hp.com/service_locator)
- <http://www.hp.com/support/manuals>
- <http://www.hp.com/support/downloads>
- <http://www.hp.com/storage/whitepapers>

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<http://www.hp.com/support/storagedocsurvey>

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# Glossary

## D

<b>D2D</b>	The HP StorageWorks D2D (disk to disk) Backup Systems product line.
<b>D2D Replication Manager (Replication Manager)</b>	The software described in this user guide.
<b>deduplication</b>	The feature in which only a single copy of a data block is stored on a device. Duplicate information is removed, thereby reducing the amount of storage used by a given data block.

## G

<b>group</b>	A group consists of D2D Replication devices (target, source, and non-replicating) that are added to Replication Manager and are allocated to a specific client or organization. Those with user-level permissions can see groups to which they have been granted access. Those with administrator-level permissions can see all groups in Replication Manager. Devices and users can be added to or removed from a group, as appropriate, by an administrator.
--------------	--

## H

<b>HP StorageWorks D2D Replication Manager (Replication Manager)</b>	The software described in this user guide.
--	--

## L

<b>library</b>	A system on which many tapes or disks are stored for easy retrieval. For the Replication Manager it is either a library or allocated space that acts as a library on a device, is recognized by Replication Manager, and can be a target or source for replication jobs.
----------------	--

## N

<b>NAS Share</b>	A NAS (Network Attached Storage) Share is a shared file that resides on a NAS server, and is a network location from and to which files are transferred. For the Replication Manager it is either a NAS Share or allocated space that acts as a NAS Share on a device, is recognized by Replication Manager, and can be a target or source location for replication jobs.
------------------	---

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